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WORLD MARITIME UNIVERSITY
Malmö, Sweden

**MAINTAINING LIBERIA'S POSITION AS THE
LEADER IN REGISTRATION TONNAGE IN
THE FACE OF STRONG INTERNATIONAL
OPEN REGISTRY COMPETITION**

By

SAMUEL ALAHDEMAH KANASUAH
Republic of Liberia

A dissertation submitted to the World Maritime University in partial fulfilment of the requirements for the award of the degree of

MASTER OF SCIENCE

in

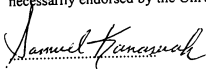
**GENERAL MARITIME ADMINISTRATION AND ENVIRONMENT
PROTECTION**

1997

DECLARATION

I certify that all the material in this dissertation that is not my work has been identified, and that no material is included for which a degree has previously been conferred on me.

The contents of this dissertation reflect my own personal views, and are not necessarily endorsed by the University.



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ABSTRACTS

Title of Dissertation: **Maintaining Liberia's Position as the Leader in Registration Tonnage in the Face of Strong International Open Registry Competition**

Degree: MSc

Trying to maintain Liberia's position as the Leader in Registration Tonnage in the face of Strong International Open Registry Competition is all what this dissertation is about.

Until 1993/1994, Liberia has been the largest registry in the world in terms of gross registered tonnage. Considering the size and population of Liberia, proceeds received from its open registry activities is significant. In spite of the seven years civil war, the registry has remain the only principal source of income for the government.

But there are emerging competitions which pose threat to the registry. The aim of this study is to investigate who those competitors are and to examine carefully the reason for the decline over the past years. If the competition poses big problem, what is the solution and what could be done further to make the Liberian's Registry of first choice? Could allocation of some of the fees from the ship's registry provide sufficient capital to work improvement?

This study also will discuss in brief the economic impact of open registries on the trading partners, countries providing ancillary services and open registries countries themselves. It will pinpoint the role Liberia play as a major shipping registry nation in providing incentives and opportunities in these three areas of world economy.

Safety standards in the future of open registry, the problem of corrosion in the world's fleet and a possible solution including the question whether IMO's work on maritime safety could help to keep Liberian Flag pre-eminent was analysed.

There is a conclusion of the dissertation. In the conclusion, there are proposals and recommendations suggesting ways to keep the Liberian Open Registry pre-eminent. Few important proposals and recommendations to make possible changes in the Liberian Bureau of Maritime Affairs was also included.

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LIST OF ABBREVIATIONS

BMA	Bureau of Maritime Affairs
DOC	Document of Compliance
EC	European Community
FSI	Flag State Implementation
GMDSS	Global Maritime Distress and Safety System
grt	Gross Registered Tonne
IACS	International Associations of Classification Societies
INMARSAT	International Mobile Satellite Organisation
IMO	International Maritime Organization
ISMA	International Ship Managers Association
INTERTANKO	International Association of Independent Tankers Owners
ISID	International Ship Information Database
IRI	International Registries Incorporated
IT	Information Technology
ITC	International Trust Company
ITF	International Transport Federation
LR	Lloyd's Register
MEPC	Maritime Environment Protection Committee
MARPOL	International Conventions for the prevention of Pollution from Ships
MINCONMAR	Ministerial Conference of West and Central African States on Maritime Transport
MOU	Memorandum of Understanding
MSC	Maritime Safety Committee
NPA	National Port Authority

PSC	Port State Control
QSCS	Quality System Certificate Scheme
SOLAS	International Convention for the Safety of Life at Sea
STCW	International Convention on Standards of Training, Certification and Watchkeeping for Seafarers
SWEDMAR	Swedish Central for Coastal Development and
SIDA	Swedish Central for Coastal Development and Management of Aquatic Resources
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development

Chapter I

INTRODUCTION

Liberia's Open Registry effort all started as a brain child of Edward R. Stettinius Jr. who was Secretary of State of The United States of America. In the post war era, the Panamanian fleet grew as a result of international shipping competition to replace tonnage lost during the war. There was opposition from both the American Labour Organisations and the European shipowners in using the Panamanian flag coupled with the misuse of the registry for fees to upkeep their world-wide consular system. Also there was serious political instability and the growing of anti-American feelings.

The Americans were led to believe that Panama could nationalise or confiscate shipping. Therefore the shipowners were worried and concerned, looking for an alternative to maintain competition with Europe. An opportunity was found to develop a new merchant flag as a by-product of the plans of Edward R. Stettinius, Jr. for a system of privately directed economic aid for Liberia.

Because the Liberian system was tailor-made for modern American shipping necessities, it was far more efficient, effective and responsive to business and government pressure than the accidentally formed Panamanian system. In few years, Liberia surpassed Panama and she flew over the largest merchant fleet in the world.

The stable political atmosphere in Liberia ,which lasted from the 40's, and the "Open Door Policy" of President William V.S. Tubman of Liberia, embraced the concept of a needed foreign exchange.

Stettinius and associates worked hard to draft the Liberian Maritime Code which avoided the flaw of the Panamanian Code and this slightly modified version tailored after the US Maritime Code was passed by the Liberian Legislature in 1948 and signed by President Tubman.

Analysis of the present situation associated with Liberia in relation to maritime affairs starts with the economical aspects. At present, the level of economic backing of the Liberian State is very low as a result of the civil crises that engulfed the country during the last seven years.

Other interesting economic activities such as the mining of iron ore among other vital priorities was hindered, leaving no other income yielding avenues for the government, save the Liberian Maritime Program.

Competition is being faced from other registries such as Panama, Cyprus, Marshall Islands and The Bahamas. The Marshall Islands Registry poses the largest threat due to it having been created by the International Registries Inc. an American Company in Reston Virginia. It was created as a rival registry to the Liberian Registry which is administered alongside competitively. This all came about as a result of some political motivation.

The net difference between existing tonnage going to the Marshall Islands Registry from vessels under the Liberian flag versus incoming tonnage to the Liberian Registry is a major threat and concern of analysis in this study. There are other factors that might have contributed to the decline of Liberian tonnage, although not in a significant way compared to the shifting of vessels directly from Liberian Registry to the Marshall Islands. These are usually done as result of advise to shipowners from the International Registries Inc.

However, Liberia is doing everything possible to overcome this competition and to continue to offer shipowners a preferred place to register their vessels.

Benefits from the open registry shipping activities has been quite substantial for Liberia when considering its geographical size of 44,000 square miles and population of 2.4 million. The net revenue annually totalled to an amount of 16 to 18 million US Dollars.

Although not on a large scale, jobs aboard Liberian Registered Vessels has in the past provided some Liberian seamen with profound employment, thus making them earners of foreign exchange and simultaneously helping them develop new skills.

Economically, open registry has contributed substantially to the enhancement of mankind as a whole. It provides employment to thousands of seafarers world-wide and has improved their standard of living. It provides shipowners with additional net-earnings. With the advantages of very little or no taxation and lower operating costs, large independent operators could invest their profits in new shipbuilding ventures.

The traditional Maritime Nations have had the capacity to construct and manned vessels. In many of these countries, national law and trade union's pressure required the ships to be manned by nationals. But shipowners who register the vessels under open registries, have the freedom of employing from a world-wide post of employment-sources.

When investigating the maritime-status in the particular case of Liberia, one cannot rely on temporary, arbitrary figures of surveys showing Panama's advantageous position over Liberia, considering the nation's current pre-war status. Most such

calculations on tonnage ought to be explained as being a result of short term occurrence due to political motivation as is illustrated in the particular case between Liberia and the Marshall Islands.

A very essential criteria that could be used when comparing nation's paramount importance to the shipping industry and its international administrative organisation (The International Maritime Organization) is safety, which is what Liberia has managed to maintain effectively and efficiently over the years.

Being renowned for having a high standard of safety Liberia has, time and time again, proven to be the shipowner's domicile of choice. Panama including the entire shipping community can not come near Liberia's standard for safety.

As a prove of the quality of the Liberian high safety standard programme, one must consider the result from loss ratio figure of Liberia versus world loss ratio and one could realise that Liberia's loss ratio compared to the world's loss-ratio for the same period has been far below the world's loss ratio for the same period.

There have been political and social setbacks, for example the coup d'état in Liberia in 1980, when tonnage fees increased from 0.10 to 0.30. Also premature scrapping combined with world wide recessions and a depressed shipping market could all be accumulative, contributing and devastating factors.

Other shipping services and their economic benefits compared to the services of open registry is being discussed. Like open registry, other ancillary services could stimulate shipping activities and make a positive impact on a country's economy. It is an integral part of the entire shipping business and is equally vital to the process of shipping.

Investment in the development or improvement of some of these services should comparatively be made with benefits other than finance where government direct investment is concerned. This could particularly be emphasised in the field of ship repairs. It may not give a direct profit but still provide wider benefits serving the national interest in employment opportunities.

The future in open registry should take into consideration what effect the political and social changes could have on shippers as well as the open registries themselves as it sometimes affects the chances of the shippers for equal competition in the international shipping business and also lower the profit margin of the open registries countries.

In this dissertation, the fees structures of the major open registries displaying fees, taxes and administrative charges have been given. The tables showing the various countries and what they charge for, give an insight in what Liberia need to do in terms of its charges to shipowners for different registration activities.

The development of the concept of Port State Safety Control occurred at a time when world shipping, particularly the oil transport trade was low. This study will trace the historical development of port state control, including current applications and problems, and propose the regionalization of port state-control under the auspices of the IMO. Port State Control will help to carry out inspection on open registries flag vessels entering the world's ports.

This research defines the role of technical advancement in the shipping industry in the area of information technology, communication, vessel types, design and operation, including computer technology. All of the above have had a great impact on the way in which shipping-activities are dealt with today.

Safety standards shown by the Liberian Administration have undoubtedly been quite remarkable. Flag Administrations are often measured according to their vessels loss ratio and whether they are targeted by port-state control regimes, Liberia have been an exception in this case.

However, standard of safety remains the focus point of the International Transport Workers Federation, (ITF). ITF has been one of the major critics of open registries. It has a special seafarer's section committee dealing with seafarer's matters.

Still talking about safety, many international agreements have been set up under the auspices of the IMO and old conventions have been revised and amendments added all as an effort to maintain high safety-standards for the marine community.

The Sub-Committee of Flag State Implementation (FSI) was established by IMO to deal with the problem of implementation and enforcement faced by developing countries especially. It is essential that flags states whose flags are worn by the world's ships be responsible to put down the standards which could ensure very high safety at sea. IMO has in this regard set up standards and updated them, but have not been equally as successful in supporting and ensuring their global implementation. Port State Control Safety Inspection has proven to be the answer to this call at this point in time.

The role of classification societies will never be ignored in helping to maintain global standards and implementation of regulations set up by Flag States for safety. Many flag states tend to delegate some authority to classification societies allowing them to act on their behalf in safety matters.

Liberia, inspite of its globalized safety inspections system set up, have employed and utilised the services of the classification societies. To monitor whether the

classification societies are doing their delegated job effectively, the Liberian Administration has posted over 700 nautical inspectors world-wide. They do not duplicate the work of the classification societies, but they also inspect Liberian registered vessels on a regular basis to ensure they remain safe.

The effect of corrosion on the age of ships and possible solution for the shipowners was discussed. The reluctance to order new tonnage has led to a general ageing of the world's fleet ; a factor which appears to constitute part of the root of this specific problem.

Ship Structural Management has been one of the measures set in place to solve this problem. It is an integrated package which provides an efficient and cost effective means of maintaining a uniformity high standard of safety throughout the ship's life.

Because the cost of anticorrosive coating is low, easy to apply and due to its proven ability to prevent the onset and progression of corrosion during the major proportion, if not for the entire lifetime of the ship, it will remain the most economic solution for the protection of seagoing assets for a very long time to come.

The shipowners has the primary responsibility for the standard of design, construction, maintenance, and manning operation of ships. To say that a shipowner's attitude towards this responsibility vary is a masterpiece of understatement.

The practicality in managing ships was the topic that pinpointed the greed shown by ships managers over making profit whereby ignoring safety which should be of first priority in shipping activities.

While some shipping companies are concerned only with the financial survival, some hope to trade profitably. Another category of shipowners out of their sense of pride, a long time tradition of shipowning or an enlightened long-term self-interest insist upon the highest standards.

Standards for the management of shipping are set out in IMO resolution A.741 (18), which contains the text of the international management code for the safe operation of ships and for pollution prevention, known as the IMO International Safety Management Code (ISM).

It is learned that the UK Chamber of Shipping and the International Association of Independent Tankers Owners (INTERTANKO), despite the higher demands on company resources, many of their members have introduced external audits of their company procedures to certify that they meet ISO 9002, an internationally agreed standard covering quality management standards.

The shipping companies have challenging future facing them with the rise of third party shipmanagement sector which has been one of the most significant developments in shipping over the past fifteen years. The message is that shipmanagers should improve operating standards, a view held by the International Ship Managers Association (ISMA), the trade association of the shipmanagement industry, which now has 40 members representing the majority of ships under third party management.

Could IMO activities on maritime safety help to keep Liberian Flag pre-eminent? Yes, as a major flag state involved in the business of open registry, there can be nothing more true than this. Shipping is an international business, operated and regulated internationally. There is no doubt that in this context international action is generally more effective than national action. It is always necessary to bear in mind

the legitimate interest of other states, and that unilateral action by other states could harm Liberia's interest in an unacceptable degree.

Liberia has ratified most of these conventions as soon as they come into being and has been able to implement majority of these codes and recommendations adopted by the IMO Assembly.

One of the most important innovation is the role IMO could play concerning the validity of the certificates issued by flag states. Infact all countries will be requested to provide information to IMO concerning administrative measures that are set in place to ensure compliance. The information will be used by the Maritime Safety Commission which with the appointed panel of experts will appraise the administrative measures.

IMO has devoted more attention to improve the way governments implement IMO Standards on ships under their flag and has encouraged the establishment of Regional Agreements for carrying out ship inspections by Port States.

The author mentioned about political and social changes taking place in the maritime industry today. Under this topic, a discussion on the United Nations Conference on Trade and Development (UNCTAD) attempts to phase out open registry was carried out.

During these changes, the observation is that various open registries for example like Panama, Liberia including the Bahamas have had the habit of gaining tonnage at the loss of the other partners. Taking advantage of a politically unstable condition prevailing in one of those countries at a time, the others instead, encourage shipowners to cancelled the registration of their vessels from such country's flag to their own flags promising sometimes high discounts and other attractive benefits.

Chapter II

HISTORICAL BACKGROUND

2.1 Liberia as a Maritime Nation

In the mid-nineteenth century, Liberia had a sailing fleet and it was a striking achievement because many of her 300 sailing ships were constructed and wholly owned in Liberia. This became an important factor in the West African Economy at that time. Nevertheless, those fleet almost disappear by 1900, at the time steam took precedence over sailing vessels. While Liberia has being considered by the traditional maritime states as upstairs in the world of shipping, it is worth to mention that she have had a minor maritime tradition of its own and therefore it is unfair to call Liberia a non maritime nation.

2.2 Shipowners Fled Panama to Liberia's Flag

In the post war era the Panamanian merchant fleet grew as a result of international shipping competition to replaced lost tonnage after the war. Panama had an extensive consular system around the world at the time and this could not be financed by the country without the ship registry system. Shipowners considered this practice as corruption on the ground that consuls regarded this system for revenue to maintain a world wide system of consul.

Overall the Panamanian's Government became unstable and this led the American to believe that it could be possible for Panama to nationalise or confiscate shipping. There was opposition to the use of Panama's Flag from both the American Labour Organisations and European Shipowners. As the country show signs of social instability and growing anti-American feeling, the shipowners were worried and concerned, therefore they wanted an alternative.

The American owners then search for new means to maintain competition with Europe. They found an opportunity to develop a new merchant flag as a by-product of the plans of Edward R. Stettinius, Jr. Secretary of State for a system of privately directed economic aid to Liberia.

In 1947, he organised Stettinius Associates-Liberia, Incorporated. In 1948 a report to Stettinius indicated the possibility of certain shipping interests had indicated willingness to obtain registration under the Liberian Flag. By mid-1948, President Tubman of Liberia as well as officers of Stettinius Associate show anxiety to get the ship registration underway.

In 1949, the Americans business and political leaders were successful in the improvement of Panama's haphazard and self evolved system, and created through it an amazing example of corporate-dictated international political action, the Liberian Registry System.

But Liberia have originally being formed with American assistance and Liberian knew that assistance from the US was contingent upon treating American officials with expected deference.

American interests and prejudices led Stettinius to propose private assistance to Liberia through philanthropic enterprise and Firestone an American Company with

the world's largest rubber plantation in Liberia, was on hand to render such assistance. Furthermore William V. S. Tubman was elected 1944 as head of state of Liberia on an open door platform promising to recruit foreign investment. He also wanted visible results in the form of revenue and action while the corporation wanted to show revenue to attract new investors.

2.3 Drafting of the Liberian Maritime Code

The drafting of the Liberian Maritime Code was in process from 1947 onwards. While both side were eager, a hasty work was done simply copying comparable elements of the US Codes which was changed slightly and the Liberian Legislature accepted the slightly rewritten Code in November 1948 and Tubman signed it into law.

The details of the Code's Authorship was never made public and Liberia's official position was that it consulted experienced admiralty law experts to develop a modern law.

It was not known whether those experts referred to were members of the ship-owing group in the Stettinius Organisation and the Ship Management at ESSO, all involved in highly profitable tanker operations under Panama's Flag. Therefore a serious doubt is cast on their objectivity and independence in drafting this code for the Liberian Maritime Program.

Because the Liberian System was tailor made to modern American Shipping necessities, it was far more efficient, effective, and responsive to business and governmental pressures than the accidentally formed Panamanian System. In few years, this new maritime flag system surpassed Panama's and Liberia's Flag flew over the largest merchant fleet in the world at that time.

2.4 Analysis of the Present Situation in Liberia

The analysis of the present situation in the Liberian Open Registry will be in a general terms as issue touched here will be analysed in details in other preceding chapters.

2.4.1 The Seven Year Civil War

Because of the devastating civil crisis that took a toll on the country, the entire economic background of Liberia at present has been so disrupted, as an outcome, all other economic activities that brought in income to the Liberian Economy came to a halt. Some of those economic activities and resources the author is talking about are:

- The Firestone Rubber Plantation Company, the largest in the world, which became a vital source of revenue for the government which also provided a large scale employment opportunities for the Liberian populace.
- Iron ore, one of the major source of income mined illegally over the years, brought in substantial income to the country at that time and there are still untapped nature resources in Liberia.

2.4.2 Source of Income for Liberia at Present

The Liberian Open Registry of ships is the only major source of revenue right now for the government. The net revenue from this Registry annually totalled some sixteen to eighteen million US Dollars. This amount represent a high percentage of the total revenues for the Liberian Government fiscal accounts when one considered Liberia with a population of less than three million people.

2.4.3 Benefits to Liberia and Shipowners

Few of the benefits shipowners gain from joining this registry are professional operation and high quality safety standards. The lenders of funds accept financing requirements on a Liberian Registry vessel because the lenders are assured that shipowners lien can be lawfully dealt with in court. Also added upon that is the flexibility to select from optimum manning source.

There are only few Liberians working onboard many of these vessels under its Flag. But their employment on these vessels enable them to bring in foreign currency and acquire new knowledge. A great stride by government in the form of establishing a Maritime Institute to train more Liberian Seafarers, to be able to benefit fully from employment opportunities onboard those vessels and their chances of earning more foreign exchange for the country was instituted.

2.4.4 Open Registry of Other Nations

Even though Liberia ranked number one in open registry shipping for a considerable long period, from 1993 until present, it lacks behind Panama. Impressive to mentioned about this registry, is the fact that it has endeavoured to recover and assume its rightful place as the leader in registration tonnage.

Liberia however, has vowed to offers and will continue to offer the shipowners a preferred place to register their vessel in order to assist them to be successful in the competition of international sea transport.

Beside Panama, there are other registries like the Bahamas, Cyprus, Marshall Islands among others that are competing with Liberia.

In the face of strong international open registry competition, the Marshall Islands among the others are to be given attention.

The Marshall Islands Registry in particular, poses greater threat to Liberia's own registry because it was created as a rival registry to the Liberian Registry and is being operated by the same International Registries, Inc., in Reston Virginia, the American Company who also administers the affairs of the Liberian Registry.

2.4.5 Proposals on the Analysis of the Present Situation

From the analysis of the present situation in Liberia, it is proposed that the government pay attention to the emerging competition from other registries.

Among other suggestions, the government need to allow the technical experts in the maritime field to handle the issue of the competition facing Liberia from other open registries. They are capable of finding solution to this problem instead of handling it politically.

Since the Marshall Islands was created with political motives and is being administered by the same company that administers the registration affairs of the Liberian Registry, care should be taken on how to deal with the competition in order to encourage shipowners to remain attractive to its flag.

The problem have been compounded by the effect of the civil war. It has absolutely closed other areas where income was also generated for the government except for the fees raised from the Open Registry activities. It could further be proposed that study be conducted on ways and means of considering other area like ship repairs since Liberia have had an increase in coastal trade with other neighbouring countries. Most of these vessels coming in the Liberian Ports are substandard and will therefore require repairs. At present there are many ships transporting a great number of people and goods in its ports as a result of the civil war. Such alternative could yield funds and could equally be beneficial like open registry.

Chapter III

THE PAST AND PRESENT ECONOMIC CONDITIONS OF OPEN REGISTRY IN LIBERIA

3.1 Economic Benefit to Liberia

For the mere fact that some of the world largest vessels like, tankers, bulk carriers and passengers ship totalling so many million gross registered tons registered under Liberia's Flag, it yields substantial income to the country. Consistently, the Liberian open registry from the 40s to present have been a high earners of foreign exchange for the country. The revenue generated during the early years of the registry was primarily used to support the expanding foreign missions of Liberia. It became increasingly more significant in 1975 and onwards.

The apparent realisation of the pressing employment problem, coupled with the growing speculation of the genuine economic link being reflected in the manning of vessels by nationals, culminated in a more structural approach to maritime training by the Liberian Government.

3.2 Vessels From Which the Liberian Registration Fees are Drawn

A table exhibiting the various categories of vessels and their tonnage, on which the Liberian registration fees are determined:

Table 1 The Vessel Monthly Statistics, 1996

MONTHS	NON-TANKER	TANKER	TOTAL	GROSS TONS	NET TONS
JANUARY	1,165	732	1,897	62,868,988	35,404,427
FEBRUARY	1,174	734	1,908	62,114,632	35,510,012
MARCH	1,181	738	1,919	63,390,322	35,696,270
APRIL	1,185	742	1,927	63,536,858	35,762,773
MAY	1,181	739	1,920	63,345,072	35,644,425
JUNE	1,186	741	1,927	63,686,020	35,802,633
JULY	1,177	746	1,923	63,692,201	35,824,705
AUGUST	1,191	751	1,942	64,093,599	36,008,085
SEPTEMBER	1,191	748	1,939	64,047,017	36,029,836
OCTOBER	1,192	748	1,941	64,126,710	36,095,305
NOVEMBER	1,185	750	1,936	64,344,844	36,197,662
DECEMBER	1,180	746	1,927	64,154,581	36,027,898

Source: Maritime Operations Department of Liberia, 1996

3.3 Economic Impact of Open Registry

Open Registry as will be seen, is not only for selling one's flag to obtain fund from fees so generated from such registration activities. Its impact economically could also be viewed from the open registries themselves, those trading together for export and import including those providing ancillary services.

If there weren't economic advantage, there would be little incentive to use open registry and this fact was confirmed by UNCTAD analysis that the direct operating cost of Open Registry Flag Vessels are lower than those of traditional developed maritime countries.

There are exemptions from taxation and other charges and these have contributed to lower transport costs and eventually in the long terms to lower freight rates.

3.3.1 Trading Partners With Import and Export

Pertaining to trading partner whose import and export prices are affected by transportation cost, open registry minimises operating costs during transportation of these imports and exports.

Those countries that are far from the market with the highest ratio of transport are the greatest beneficiary of the cost advantages especially transport cost of open registry shipping.

Open registry shipping will make the cost for transportation to be low and when the transportation for commodities are low, then the prices of commodities to the consumer becomes low and also there is a higher sale volume.

Liberia with most of the world biggest ships have accounted also for some of the world's largest vessels when talking about size and these modern days designed vessels sail at tremendous speed and spend minimum days in ports.

Here arise a simple mathematical true about the transport cost by saying, transport cost is basically a function of vessels days involved, that is, the longer the voyage time in port, the higher the transport cost. The size of the vessel utilised and the days for loading and unloading can play major role to determine the overall transport cost of a voyage.

3.3.2 Provider of Ancillary Services

Ancillary services are those offered in the shipping industry such as ship repair, provision of seafaring personnel (crewing) and the provision of open registry.

The economic impact of open registry to those providing ancillary services is being analysed. The development of such services in the maritime sector to serve shipping and stimulate shipping activities in a country will have a positive impact on the economy and could be a desirable alternative to direct investment in the development of a national fleet.

There are different countries who specialise in providing one or two of these services taking advantage of the circumstances that favour its involvement. This support the theory of comparative advantage.

For example, Liberia with its past history of political stability, its open door policy initiated by President Tubman, back in the 40s and its ties with America, made it suitable to shipowners for ship registration. The Philippines is a ideal supplier of seafaring personnel because of the surplus willing personnel who are quick to acquire the basic required skill as sailors.

3.3.3 Those Providing Seafarers

The author wishes to demonstrate what the impacts of open registry are to those providing seafaring personnel. Open registry will give shipowners the opportunity to select crews from a world-wide personnel pool and provide them more labour intensive shipping and increased job opportunities for people coming from areas of cheap labour.

When a shipowner employs crews from areas of cheap labour, this could cause the creation of additional jobs. A special survey on an average crew size was calculated from a Liberian Registry Records, showing the average size for high and low cost crews.

Table 2 Data of High and Low Cost Crews

High and Low Cost Labour Sources	No of Tankers in Sample	No of Crew	Average Crew/Tanker
High Cost Labour Sources: Northern Europe, Spain, Italy	66	2111	32
Low Cost Labour Sources: Taiwan, Philippines, India, Bangladesh, Indonesia	69	2540	37

Source: Liberian Bureau of Maritime Affairs, 1987

The data shows that additional five crew are employed when they are chosen from low cost labour sources. This shows 15% labour input, hence the conclusion here is that when the shipowner have the freedom of employing from a world-wide post of employment sources and he or she chooses low cost labour source, it has the overall effect of making shipping more labour intensive and creating additional jobs for seafarers.

3.4 Competition Faced From Other Registries

3.4.1 The Liberian Position

Taking not for granted, there is a serious competition faced by the Liberian Registry to the extent that she no longer enjoy the position as the leader in open registration tonnage.

This time it is Panama who enjoys that leadership position putting Liberia in the ranking of second place. Greece is the third in the ranking followed by Bahamas, Cyprus, Malta, Japan, Norway, China and Singapore respectively.

While it is mentioned that Liberia comes second place after Panama for the first time since 1993/1994, it will be equally fair to considered Liberia as one of the premier open registry as it has one of the largest fleets of merchant ships in the world accounting for over 60 million gross tons.

It could be in the best interest of Liberia to drastically change some of its policy and adjust to other conditions in its registry to still convince ship owners that she is still the best and could remain so.

3.4.2 The Panamanian Position at Present

The recent update on the registry indicated that as of April 9, 1996, the Panamanian registry has experienced of its fleet to 13,378 ships which totalled 95.5 million gross tonne. The Panamanian registry for the first time in little less than two decades surpass Liberia in tonnage since June 1993 until now and its fleet remains the world's largest with 6,105 ships. This account for almost 60% of the rise and extending its lead by 22.1 million gross tonne over its nearest competitor Liberia which have 1,684 ships of 59.98 million gross tonne. Panama has steadily increased its fleet over the last five years and now it has over sixteen percent of the world fleet.

According to sources, apart from other indirect benefits from Panama's Open Registry, its ship registry generated US\$ 44.4 millions in 1994 and US\$ 47.5 million in 1995 respectively.

At the end of 1995, the Panamanian Registry accounted for 13,282 ships of 94.5 million gross registered tons representing an increase of 950 ships and 9.3 million tons from the previous year. However, this number of ships include pleasure yacht, vessel less than 100 tons and fishing vessels.

Beside Panama, as mentioned first place in the rank of the competition, some other registries especially the Bahamas is coming up fast and the advantages she offered shipowners are many incentives that are of more attractive nature in comparison to those of Liberia.

3.4.3 The Bahamas Registry

The Bahamas is another upcoming registry that is growing fast and attention need to be given to. Comparing the Bahaman's Shipping Registry to Liberia, ship registration is a relatively new business and yet has grown from less than one million gross tons to be the world's third largest fleet in little more than a decade.

Most of the respected international ship owing companies fly the Bahamian's Flag, including Exxon International, Maersk Line, Teekay Shipping and Chevron. Even some of the luxury vessels registered include Holland-America Cruises and the Norwegians Cruise Lines.

While the author did not touch yet on the factors responsible for the success of Bahamas and other registries, it is worth to mention here that there are factors which are contributing to these successes and it will be mention in the next heading "Comparative Analysis, Which Registry Ahead".

3.4.4 Major Reason for Decline in the Liberian Tonnage

The creation of the Marshall Islands Open Registry would bluntly be said, has become one of the major causes to the problems facing the Liberian Open Registry.

There are other political reasons that could go beyond the scope of this dissertation relating to the Marshall Islands while trying to explain the reason for its contribution to the decline in the Liberian Tonnage.

For example, during the period of October to December 1996, an unprecedented number of vessels was issued permission by the International Registries Inc., the body that manages both the Liberia, and Marshall Islands Flags. In October 1996, fourteen vessels were transferred from the Liberian Registry to the Marshall Islands' Registry.

So one could become to understand basically that the loss of most of these vessels from the Liberian Flag have enabled Panama to take the lead in registered tonnage.

3.4.5 Arguments in Support of Liberia Retaining its Previous Position

The author has a strong argument that make him to still believe that Liberia could once again not in the very long distant future maintain its position as the leader in registration tonnage in the face of the growing international open registry competition.

Prominent among some of the reasons for his optimism, is the fact that since 1948, the Liberian Maritime Programme which include an open registry has served the shipping industry by providing a lot of advantages and incentives to ship owners to compete. This is a fact that have enable them to successfully compete in the maritime transportation of world trade. This fact is proven from the long period that

Liberia has been considered the premier open registry with the largest fleets of merchant ships in the world until 1993/1994.

One of the strong reasons given for Liberia's decline is due to the shifting of many flags from its registry to the Marshall Islands Open Registry. This fact is prominent among reasons that contributed to Panama taking the lead since June 1993 until present.

The integrity of the Liberian Maritime Program, the high quality of its vessels and the professional skills with which they are administered are internationally recognised by leading institutions and shipyards that accept mortgages on vessels as security for payment.

Its excellent safety record and the loss ratio far below those of the world loss ratio are realities that comes about as a result of its mandatory vessel inspection program of hull, machinery, safety and communications equipment, crew training and qualifications.

A five year loss ratio of Liberia compared to the world drawn from the Annual Reports of The Institute of London Underwriters is one of the proof of its excellent record. Liberia loss ratio was 0.22 as compared to the world's loss ratio of 0.30 for the same period. This information could be obtained from the above mentioned source which was not available at the time of writing this dissertation.

Another strong reason why the author believe Liberia could over come the threat and again maintain its position as world leader in open registry business is because Liberia has been very active in the International Maritime Organization (IMO) since its inception and has worked to transformed IMO policy into effective action. One example among many for its active contributions to IMO was that of becoming the

first nation to ratify the Traffic Separation Scheme. With these kinds of backgrounds, it is easy to see why many ships prefer registering under this dynamic flag.

The shipowners realised that they will have no serious difficulties in meeting IMO standards like their counterpart who fly flag of less safety standards.

Liberia's registration efforts are directed to the IMO Committee on Marine Environment Protection and Marine Safety, also its efforts are directed to some subcommittee on Flag State Implementation (FSI), Fire Protection, Ship Design and Lifesaving Appliances.

3.5 Comparative Analysis-Which Registry Ahead?

3.5.1 Introduction

When investing the maritime status of other registries in comparison to Liberia, one should not rely on temporary, arbitrary figures of surveys showing Panama's advantageous position over Liberia, considering the nation's current pre-war status.

Most such calculations ought to be explained as being a result of short term occurrence due to the political motivation as is illustrated in the particular cases of Liberia and the Marshall Islands.

A very essential criteria that could be used when comparing nation's paramount importance to the shipping industry and its international administrative organisation (The International Maritime Organization) is safety, which is what Liberia has managed to maintained over the years.

Being renounced for having a high standard of safety Liberia has, time and time again, proven to the shipowner's domicile of choice. Neither Panama nor other registries can be compared to Liberia's standard for safety.

As a prove of the quality of the Liberian high safety standard programme, one must consider the loss ratio figure of Liberia versus world loss ratio as mentioned earlier.

3.5.2 Other Backgrounds Analysis on Liberia's Success in Open Registry

For the Liberian Registry which is in the centre of comparisons to other major open registries countries, the author would like to comment further on some reasons in support of his arguments as to why shipowners have remain competitive for a long time while under the Liberian Flag.

Liberia from the beginning have adopted maritime and association law based on those of the USA to serve the need of world commerce since 1948 and had been the corporate domicile of choice for thousands of professionals. In its corporate program, she was one of the first offshore, zero tax jurisdictions.

Based on US Corporate Law, there is allowance for the formation of corporation general and limited partnerships, unincorporated associates and other business entities.

Liberia Companies are simple to form, low cost and highly confidential. No requirements to file annual reports or tax returns and bearer shares are permitted. No requirements to file the names of officers, directors or shareholders and moreover, directors and officers may be any nationality and meeting may be held anywhere in the world.

It is from these flexibility and the open door policy concept adopted by the Liberian Leaders from the 40s which prompted the establishment of an open registry that was attractive and is still attractive to shipowners to this day.

It may be recalled that there have existed numerous open registries countries for long before Liberia, for example like Panama, but the favourable business conditions the Liberian Flag offered shipowners to remain competitive and sometimes dominating caused most of the major shippers among which were the giant American tankers owners to choose Liberia as a stable home for their vessels.

Liberia has enjoyed tremendous peace and tranquillity in the world since its founding in 1847 as the oldest democracy in Africa and that stability was one of the key factors why Liberia has been privileged to such international attraction for business purpose so to mentioned.

Its vessels are of high quality and are administered professionally and this has been recognised by leading institutions and shipyards that accept mortgages on vessels as security for payment.

3.5.3 Incentives & Opportunities Offered to Shipowners by Liberian Compared to those of Other Open Registries

Liberia

Below are some of the special opportunities and advantages offered when a vessel is registered under the Liberian Flag.

- A world-wide network of national inspectors who conduct in port inspections and respond to shipowner and operator needs. The International Registries Incorporated (IRI,s) inspection and follow-up program support vessels operation efforts in meeting international certification standards.

- The International Registries Incorporated (IRI) staffs includes experienced masters, nautical inspectors, marine safety and environmental protection specialist, shipping company, administrators, radio specialists and casualty investigators who provide outstanding technical support services to shipowners and operators.
- An information network of marine notices is distributed by the administration. These notices appraise owners and operators of changes to international shipping regulations and port state control activities to help avoid unnecessary delays and compliance problems.
- International leading institutions and shipbuilders have confidence in the Liberian vessel recordation procedures, documentation, preferred ship mortgage standards and administrative control.
- Services include vessel registration and documentation, crew examinations, officer certification, seafarer's identification books, radio authority, vessel inspections, technical assistance, investigations, international representation and information on maritime regulations and port activities.
- Inquires receive prompt responses. Shipowners and operators may communicate directly with the administration and questions and problems are addressed in an efficient manner.
- All fees are published and there are never any hidden charges.

These benefits of vessel registration under the Liberian Flag do not stop once the registration procedure is completed and there is legal and technical assistance available on the procedure aspects of operating registered vessels during the time the vessel is registered under either flag.

As Liberia's Open Registry Program has become a model for countries practising the registration of foreign flag under their jurisdiction, there is no doubt and mistake to say that many open registries countries have copied most of Liberia's examples in setting up and running their own registry.

Panama

This is what Panama offered to shipowners as its most remarkable advantages:

- Unrestricted age of tonnage
- Participation as an active member of IMO
- Competitive Fees by means of Reasonable regime
- A representative office in New York
- The application of the dual registry system
- Efficiency and simplicity in the inspection procedure
- Law 36 of 1995. This law authorise SECNAVES to offer discount of up to 20 percent to ships of 50,000 to 100,000 tons owned by the same owner.

The Bahamas

The Bahamas Maritime Authority was established on July 1, 1995. In the ranking, Bahamas' Shipping Registry came the third largest fleet in just little more than a decade, but ship registration is a new business in the Bahamas which just started 1976 in comparing to Liberia's registry which started since the 40s. It has grown from less than one million gross tons. Its success as a maritime centre is due to number of factors as shown below:

- Any foreign owned vessel is eligible to register provided it is over 1,600 net tons and under 12 years
- Vessels of more than 12 years of age are approved for registration
- It has long standing political stability and a highly-respected judicial system
- It has a favourable business climate and world class banking services
- Strategically positioned between North and South America

Cyprus

Cyprus is the fifth in the ranking and these are the benefits the Cypriot Registry provides to shipowners as its most remarkable advantages:

- Cyprus is a member of the council of The International Maritime Organization (IMO) which reflects the importance of the Island in international shipping activities
- Shipping companies owned by non-residents and deriving their income from sources outside Cyprus are exempted from foreign exchange control
- Government Policy provides for the registration of ships which do not exceed 17 years of age
- Vessels of any type and tonnage between 18 and 23 years of age could also be registered subject to certain conditions

Malta

The Maltese Flag come number six in the ranking and the advantages offered to shipowners are:

- Low company formation and ship registration cost
- Complete tax exemption to owners, charterers and financiers of Maltese ship of over 1,000 net tons, this exemption may also be extended to smaller ships
- No registration on nationality of master, officers and crew
- No restriction on the sale or transfer of shares of a company owning Maltese ships
- No trading restriction and preferential treatments to Maltese ships in certain ports
- Offshore Companies operating ships can enjoy all the exemptions and benefits provided for by the offshore legislation
- Malta have adopted most of the major IMO conventions

China

China, according to recent statistics of flag with the highest registry of ship, came number nine in the ranking. The registration of ships is effected under the Merchant Shipping Registration Ordinance which came into operation on the third of December 1990. Ships on the register were regarded as British until July 1, 1997 when they will become Chinese vessels.

Advantages the Chinese Shipping Registry offers are as could be seen in the following:

- If you intend to leave Hong Kong waters, you may do so
- You may register a mortgage on a ship
- A ship will be registrable in China when majority interest in the ship is owned by one or more qualified person, or operated under a demise charter by a corporation that is a qualified person
- Not registered elsewhere
- Representative person is appointed in relation to the ship

3.5.4 Comments

In this comparative analysis which shows the benefits shipowners could gain if they registered their vessels under the Liberian's Flag or not, is the judgement of the shipowners. Even though Liberia has a long history of experience in the open registry business, there are other flags like the Bahamas, though new in the business, need not to be taken for granted. It stands now in third place and have a good business atmosphere that is attractive to the big reputable shipowners who owns those companies with some of the largest fleet in the World. It has a long standing political stability like Liberia for a long time in past and is strategically located between North and South America in addition to its world class banking services.

In a competitive industry like shipping, one cannot be 100% sure to be on top of the others just because of a long tradition of good operational records as in the case of Liberia. There need to be other services to consider getting into for business consideration if open registry of vessels no longer yield substantial benefit to the country.

3.6 Other Shipping Services and their Economic Benefits Compared to the Services of Open Registry

3.6.1 Introduction

Open registry shipping in general play major part in three areas of world economy as mentioned earlier in previous chapter. The essence of this topic is to emphasis the benefits of other shipping services like ancillary services other than open registry. Since there is rising strong international open registry competition, while trying to maintain Liberia's position as the leader in registration tonnage, the Liberian Government could consider diverting some of the money collected from registration fees and invest it in other areas of shipping that could bring in profits compared to or even more profitable than open registry shipping.

3.6.2 The Economic Benefits of Other Shipping Services in General

The ancillary services of a maritime industry serve and stimulate shipping activities in a particular country which tend to have a positive impact on the economy.

Ancillary services or other shipping services apart from the employment of crew and shore based personnel could be shipbuilding, ship chandelling, stevedoring, the setting up of shipping companies with their agencies, ship repairs etc.

Ancillary services are an integral part of the entire shipping business and it is equally needed in order to complete the proper operation of shipping. However, there are specialist countries because of the theory of comparative advantage which have

engaged in one or more of those activities basing on the resources available in those countries, taking into account the economic of scale involved.

3.6.3 Others Associated Shipping Services

3.6.3.1 Intermediate Services

Besides the industrial shipping where ship users have their tonnage, whether in tramp or liner shipping, maritime demand and supply have to meet many times on the shipping market through the year. From the beginning, maritime demand and supply met directly in the early days but as market developed bigger and more sophisticated, the intermediates services became necessary.

The market knowledge and contacts, the technical know-how and professionalism and logistics services called for the need of the intermediates. Some of the intermediates services referred to are rendered by shipping agents, freight forwarders and ship brokers. These services added to other services talked about earlier like shipbuilding, ship chandelling and stevedoring are the ancillary services that could likewise yield benefits to the economy of a country in comparison to the service of open registry.

The functionaries of these intermediates, have a great impact on transport quality and their cost. On quality, they play an important role in transport reliability.

In shipping practice, a good broker is often referred to as a first class broker. In the shipping business there are breaks of contracts, frauds and other kinds of unpleasant stories, hence, relying on first class brokers is of great importance for having a reliable transport service.

The freight forwarders could provide a good service in cargo movement monitoring. By using these specialist, unexpected costs can be minimised and cost control improved.

3.6.3 2 The Benefits of Ships Repairing Services to Liberia

Since the inception of the Liberian Civil Crises, ship transportation has been the most affordable transport means along the Liberian Coast and there is a fair indications that it will remain so for long time.

Vessels coming in Liberian Ports from neighbouring countries are virtually substandard.

There is in existence now a Port State Safety Inspection mechanism set up by the Liberian Bureau of Maritime Affairs to inspects vessels coming in its ports to ascertain their safety before sailing. Port State Control request for substandard ships with minor repair problems to be conducted before certificate is issued to allow them to depart. The majority, if not all of these coastal freighters calling to Liberian ports are substandard.

Instead of doing only minor repairs because of port state requirements, Liberia could engage in full scale ship repairing which could yield a lot of income and other side benefits.

The repairing of ships, among other services named above, appears to be attractive for various reasons such as being a highly labour intensive industry. It requires less capital and in comparison less know how oriented kind of job that is suitable for a developing country like Liberia which has tremendous unemployment problems. Also it could facilitate locally the development of services for the classification of ship which in turn create avenue for earning foreign exchange in the long run. It

might even facilitate the creation of a ship building whose sizes could be locally suitable.

An investment in the development or improvement of any of those services should comparatively be with other benefits other than financial benefits where government direct investment is concerned especially in the field of ships repairs. It may not give a direct profit but still provide wider benefits serving the national interest like employment opportunities.

3.6.3.3 Proposals

In the particular case of Liberia, the government should recognise the importance of the development and setting up of a ancillary service to support shipping like ship repairs. Even though in the past government could not see the need to provide funds for investing in other areas of shipping, it is of paramount importance to consider doing so in the face of the present strong international open registry competition now at hand.

3.6.3.4 Conclusion

Definitely as shipping continue to dominate international transportation, carrying a bulk of the goods from place to place, the developing countries account for over 50% of those goods loaded and unloaded. A portion of this trade is around West Africa and an increasing number of vessels are now visiting the Liberian ports. The challenge facing the country in this regard is to take advantage of this trend by providing the required ancillary services among which ship repairing is recommended.

Chapter IV

KNOWING THE POTENTIAL COMPETITOR

4.1 Introduction

The Liberian Open Registry only four years ago, has dominated the open registry regime for decades, but something went wrong. The International Registries Incorporated (IRI), an American Organisation, is an organisation, that through its affiliates, manages the operational and administrative functions of the Liberian and Marshall Islands Corporate and Maritime Program.

IRI started developing a corporate and vessel registration program for Liberia in the mid-1940 at the beginning of the modern age of shipping. A special government charter was granted to the International Trust Company of Liberia (ITC), to act as the Maritime Administrator and as Registered Agent for Liberian Corporation. In 1949, Liberian Services, Inc. was established as the US correspondent to the ITC of Liberia. Due to some political motivations, IRI created alongside the Marshall Islands Registry, an action which brought misunderstanding between ITC and the Government of Liberia.

4.2 Misunderstanding Between Liberia and the International Registries

The Government of Liberia came to realise later that the manner in which the ITC was handling the affairs of the registries was not in agreement with the previous contract signed in 1975. The House Committee on Maritime Affairs of the Liberian Legislature called for a review of the Government and ITC.

The agreement signed in 1975 requires the International Trust Company to manage the Maritime Fund of Liberia. Now, there is a feeling that the government is not benefiting from the program as expected. The revisit of the agreement will enable government to identify problems in the collections of shipping fees.

Under the agreement, the government receives 80% of the fees collected while 20% goes to the International Trust Company.

The problem now is that the House Committee feels , the collection of registration fees is being undermined by the creation of the Marshall Islands by the International Trust Company as a rival registry. It is felt that this action has reduced the income generated from the registry.

Even though most of the requirements for ship registration are similar, there are slight differences when it comes to certain fees charged to shipowners. The IRI felt that by fulfilling the request for changes in the Liberian registry practice, they could be losing other benefits long enjoyed.

4.3 Marshall Islands-a Potential Threat to Liberia

In 1990, the Trust Company of The Marshall Islands, Inc. and Marshall Islands, Maritime and Corporate Administrators, Inc. entered into a legislatively endorsed

joint venture agreement just like they did with Liberia in the mid-1940s with the government of the Republic of the Marshall Islands.

As started earlier, it is believed that a political motivation was behind the creation of the Marshall Islands Registry to compete with Liberia. This is how the Marshall Islands ship registry program became to flourish and expanded rapidly and therefore became a potential threat that have a direct impact on the Liberian Registry.

The Marshall Islands' Ship Registry Program increased approximately 54% in the number of vessels registered between 1994 and 1995. Net tonnage jumped between 1994 and 1995, while the gross registered tonnage for the same period rose to 50%. From the monthly statistical report showing only details on Liberian vessels, one should be able to see how directly the Marshall Islands registry is affecting the Liberian registry.

There may be other reasons responsible for the current loss of Liberia's net tonnage such as tonnage adjustment after dry-docking and repairs, the demand for shipping, the new international tonnage convention, but, the net difference between existing tonnage going to the Marshall Islands' registry versus incoming tonnage is of great concern.

According to the Liberian vessel monthly analysis tables for 1996 from New York, on the cancellation side, the Marshall Islands was the direct recipient of the largest number of Liberian registered vessels under any given month. During the period October to December 1996, an unprecedented number of vessel was issued permission to transfer to the Marshall Islands. In October, fourteen vessels was transferred from the Liberian registry to Marshall Islands registry. In November no transfer permission was granted and in December, a vessel was transferred to each of the countries; Singapore, St. Vincent, Bahamas and Panama.

Table 3 Five Year Vessel Statistical Report 1992-1996

Year	No of Vessel	Gross tons in Million	Net tons in Million
1992	1,869	58.79	37.65
1993	1,840	57.00	35.57
1994	1,864	60.42	34.81
1995	1,891	62.84	35.45
1996	1,927	64.15	36.03
Average	1,878	60.64	35.90

Source: Liberian Vessel Monthly Report, 1996

4.4 Comments

As the Marshall Islands poses a direct threat to the Liberian Registry, it could be that the Liberian Bureau of Maritime Affairs examined its fees structures related to its registration practices. Some adjustments could be made in various fees charged and incentives offered shipowners could be improved upon.

The Bureau should be willing in particular to offer discount on registration fees and such discount could be extended to the annual taxes depending on the number of vessels a shipowner is willing to register.

THE IMPLICATION OF POLITICAL AND SOCIAL CHANGES ON OPEN REGISTRY

5.1 Introduction

The future in open registry should take into consideration what effect the political and social changes have on shippers as well as the open registries countries themselves. The political and social change sometimes affects the chances of the shippers for equal competition in the international shipping business and also lower the profit margin of the open registries countries.

5.2 Political and Social Changes

5.2.1 The UNCTAD Attempt to Phase Out Open Registries

The United Nations Conference on Trade and Development (UNCTAD) set up a shipping Committee in 1965 and it readily became the forum for maritime economic and political issues.

The developed countries had experienced several set backs in their efforts to eradicate open registries; especially within IMO. IMO shifted this issue to UNCTAD with a recommendation that the growth and competitive nature of open registries be studied by the secretariat. Further deliberations on open registries was

delegated to an ad-hoc intergovernmental working group in 1978 and they adopted a resolution saying the expansion of open registries fleets has adversely affected the development and competitiveness of fleets of countries which do not offer open registries facilities, including those of developing countries.

The group, resolution interpreted genuine link to include the employment of nationals of the flag state and beneficial ownership by nationals of the flag state. UNCTAD took the resolution and began a vigorous campaign to phase out open registries.

However, political interests of the varying UNCTAD Groups did not give a clear mandate to support this claim.

In 1982, the UN General Assembly established the UN Conference for Registration of Ships. They took the debate from UNCTAD and established a wider forum for all interested parties. Unlike previous meetings, this meeting of 1985 experienced a sharp drop in the anti-open registries feelings and it was accepted that open registries were an integral part of international shipping whether some countries liked it or not.

5.2.2 Effect of Political and Social Changes on Panama

Frankly speaking, registration of ships under open registries started with Panama in 1922, but this was the inauguration of the Liberian registry in 1949 as an open registry which started the rapid expansion of open registry fleets.

Panama was the leading open registry country long ago until 1954 and by 1955, Liberia had over taken Panama and became the leading nation until 1993/1994.

As learned earlier in chapter one, the inauguration of the Liberian Registry was triggered by the unstable political and social instability in Panama at the time and the

American shipowners instead, choose to create the Liberian Registry which was fashioned in their own social and political interest.

5.2.3 Panama Gains at Liberia's Lost

The Panamanian fleet had developed in much the same manner as that of Liberia, but at a much slower rate of growth up to 1970. It seems that Liberia's loss in the 1980's became Panama's gain. Out of a total of 3.6 million gross ton which left the Liberian registry, 494,000 gross ton went directly to the Panamanian registry.

5.2.4 The Effect of Political and Social Changes on the Liberian Registry

The coup d'etat in 1980, the rise in tonnage fees for the Liberian fleet and the age limit of vessels seeking new registration discourage shipowners and made them divert to other flags especially Panama. At the same time, they equally took advantage of the stable political and social conditions in the Bahamas and many prominent shipowners also shifted to that registry.

Almost one fifth of the world tonnage was under the Liberian flag in 1979. The coup d'etat in Liberia in 1980 also contributed to the decline in the Liberian tonnage. In addition to this development was the tonnage fee increases and the age limit for vessels seeking new registration which all started from January 1981.

Since 1949, Liberia have never increased its tonnage tax of \$ 0.10 per ton. Therefore the coup d'etat contributed for the first time to the tonnage fees increases from \$ 0.10- \$ 0.30 per net ton and also the requirement for the age limit of vessels seeking new registration.

Another factor that contributed to the decline was the depression of the 80's. As it is known that the highest number of the Liberian tonnage came from the huge tankers

under its flag, but the scrapping of these huge tankers surplus caused by the depression of the 1980's also contributed to the decline.

5.2.5 Benefits of Social Changes to Bahamas

The Bahamas, realising the political instability in Liberia which started 1980, began a campaign in 1982 to attract shipowners particularly from the US and it experienced a meteoric rise from a fleet capacity of less than 100,000 gross ton in 1980 to three million in 1984.

In 1987 the fleet stood at nine million gross ton. Its competitive registration conditions, its historical links with the US combined with its political stability and traditional tax haven role make it very attractive not only to the US beneficial owners but also to European shipowners.

An agreement with the US regarding the effective control of US owned ships under its flag during an emergency a feature of all open registry facilities is an added to its competitive advantage.

While Bahamas at present came the third largest country in the open registry business, it has it as its goal to become the world's largest ship registry over the next decade. This trend is not to be taken for granted as the political and social climate gave tangible grounds to support this effort as was mentioned in chapter two.

5.2.6 Comments and Proposals

The example indicated here with Liberia, Panama and the Bahamas should give an overview of how those changes can affect not only the shipowners but equally the economic of the open registry countries among which Liberia is prominent.

Also to be considered, is the outcome of UNCTAD attempts to phase out open registries as a result of political pressure from the developed countries. UNCTAD failure to accomplish that aim came about when such discussion was thrown to a wider audience with majority of the parties present in favour of open registries shipping who rejected UNCTAD's anti-campaign against the system.

With competition at the height of open registries activities in the shipping industry, countries that rely heavily on funds generated from their registration activities, must try by all means to avoid a climate of political and social instability.

An unstable climate will have the tendency to drive away shipowners from their flag to other flags where the business climate is more stable.

5.3 Fees Structure of the Major Open Registry

5.3.1 Introduction

The fees that are collected for different activities relating to open registries are of different nature for different registries respectively. Others may choose not to charge for a particular service in an attempt to attract customer. Notwithstanding, there are some basic fees of similar nature charged by almost all the registries. Example of those that have a common nature are initial registration fee and annual fee. In this chapter, the major registries are given and under them are the different activities they charged shipowners for.

To note here, is the fact that there is no regulation set by any international body associated with shipping to be a guide for open registries regime to follow in setting their different fees they charge shipowners.

Choosing a particular registry is entirely the choice of the shipowner who probably search in the open registries markets to find the incentives and opportunities that best suit their interest.

5.3.2 The Fees Structure of Panama

The Fees Structure of Panama consist of fees, taxes and administrative charges

Table 4 The Fees Structure of Panama, 1994

The Fee Items	The Fees Charged (Panamanian Dollars)
Initial Registration Fees	1.00 per net registered ton (per nrt ton)
Annual Tax	0.10 per nrt ton
Annual Single Rate	500-3,000
Inspection Tax	500-1,300
Casualty Investigation Tax	300-500
Discount	30% of the registration fees
Issuance of Certificates	450-1,200

Source: Lloyd's Register, 1992/1993 Edition

5.3.3 The Fees Structure of Liberia

Table 5 The Fees Structure of Liberia 1994

Fee Items	Fees Charged (US Dollars)
Initial Registration Fees	1.20 per nrt
Annual Tax	0.40
Marine Investigation	1,000 plus 0.50
Marine Inspection	725.00
Documentation & Publication	557.00
Mortgage Registration	475.00
Provisional Certificate of Registration	200.00
Permanent Certificate of Registration	200.00
Temporary Radio Certificate	100.00
Liberian Radio Station Licence	200.00
Certificate of Ownership	25.00

Source: Lloyd's Register, 1992/1993 Edition

There is no special terms or discount currently available for Liberia

5.3.4 The Fees Structure of Bahamas

Table 6 Fees Structure of The Bahamas 1994

Fee Items	Fees Charged (US Dollars)
Initial Registration Fees	1.20 per nrt
Annual Tax	1.10 for vessels of 5,001 or more
Discount	10% of the nrt

Source: Lloyd's Register, 1992/1993 Edition

The operations and income associated with Bahamas Flag vessels are entirely tax-free, as are capital gains on the sale of vessels. Foreign owned vessels of more than

150 gross registered tonnage (grt) are also exempted from Bahamas customs duties and documentary stamp taxes, whether they call at local ports or not.

5.3.5 The Fees Structure of Hong Kong

Table 7 The Fees Structure of Hong Kong

Fee Items	Fees Charged (Hong Kong Dollars)
Initial Registration	3,500 (up to 1,000 gross tons)
	3.50 (extra gross ton between 1,000-15,000)
	2.00 (extra gross tons over 15,000)
Annual Tonnage	1,500 (up to 1,000 nrt tons)
	3.50 (between 1,000-15000 nrt tons)
	3.00 (between 15,000-35,000 nrt tons)
	2.00 (over 35,000 nrt tons)
Provisional Registration	35% on first registration
Full Registration	75% on first registration
Discount	25% of the annual fee

Source: Lloyd's Register, 1992/1993 Edition

In addition to the above, various registration services are provided for which fee is charged. For example, for survey or inspection by a Government Surveyor on the safety equipment of a ship, a survey fee is charged. The survey fees are based on the tonnage of a ship and are revised on an annual basis. If the survey or inspection is carried outside Hong Kong, the shipowner will also have to pay for the travelling, accommodation, subsistence incurred, etc.

5.3.6 The Fees Structure of Cyprus

Table.8 The Fees Structure of Cyprus

Fee Items	Fees Charged (Cypriot Pound-C£)
Provisional or Permanent Registration	0.05 per gross ton 0.025 (each additional gross ton)
Initial Registration	50.00 (minimum fee), now 20% increase
Annual Fees	According to the net tonnage

Source: Lloyd's Register, 1992/1993 Edition

It is noted that passenger ships pay double the foregoing charges.

Other monetary fiscal incentives include:

- no tax on profits from the operation of a Cypriot registered vessel or on dividends received from a shipping company.
- no capital gains on the sale or transfer of a Cypriot registered vessel or the shares of a shipping company.
- no estate duty on the inheritance of shares in a shipping company.
- no income tax on the emoluments of officers and crew.
- no stamp duty on ship mortgage deeds or other security documents.

5.3.7 The Fees Structure of Malta

Table 9 The Fees Structure of Malta

Fee Items	Fees Charged (Lm = approximately US Dollars 2.71)
Initial Registration Fees	0.10 (first 8.000 net tons) 0.03 (additional tons) 50 (minimum)
Annual	0.15 (first 8,000 net tons) 0.08 (next 2,000) 0.06 (next 5,000) 0.04 (next 10,000) 0.03 (next 20,000) 0.02 (excess over 50,000) 75 00 (minimum)
Non-Maltese Seamen/month	1.00 (first 30 seamen) 0.50 (next 70 seamen) 0.20 (excess over 100 seamen)
Mortgage Registration	15.00
Issuance of Certificate	5.00 (per certificate)

Source: Lloyd's Register, 1992/1993 Edition

5.3.8 The Fees Structure of Singapore

Table 10 The Fees Structure of Singapore

Fee Items	Fees Charged (Singaporean Dollars)
Initial Registration	2.50 per net ton 1,250 (minimum) 100,000 (maximum)
Annual Fee	0.20 per net ton 100.00 (minimum)
Mortgage Registration or Transfer	18.00 (more than 500m gross tons) 1.00 (every 100 ton & above 500 tons)
Discount	50% (if 25% crew were Singaporean)

Source: Lloyd's Register, 1992/1993 Edition

5.3.9 Comments

Even though the excellent safety standards have made the Liberian Registry attractive and acceptable to shipowner, it is vital to examine other factors among which a prominent one could be that of fees structure of other registries.

From the fee structure of the major registries, it is observed that some registries like Panama, the Bahamas are offering discount to ships on registration fees while Liberia has not yet offered one'.

Making comparison between Bahamas and Liberia, it is revealed that Panama offer 30% discount of the registration fees and it may be a greater percentage than 30% depending on the number of ships and tonnage while Liberia have not yet offer any discount on its registry. Also the Bahamas offered attractive discount, among other incentives to shipowners as well.

It is like any business, the buyer or customers will usually prefer to buy from a seller who offer less price i.e. discount on the good being sold. The good the author is referring to being sold here is the offering of open registry by flag states to shipowners.

5.4 Port State Safety Control-Impact on the Open Registry of Liberia

5.4.1 Introduction

Ships are normally controlled from the very date of their keel laying. The Flag State exercise control, the classification societies execute regular surveys, and many underwriters also have their ship surveyed. It was largely because of the concern about the way standards were being implemented that IMO set up a new Sub-Committee on Flag State Implementation (FSI), which met for the first time in 1993. Since then it has considered other matters as the responsibilities of Governments, the difficulties experienced by flag states in implementing IMO Conventions, the human elements in shipping, the role of Port States and other related issues.

Port State Control is the enforcement by port states of accepted international rules governing the safety of navigation of vessels, safety of life and property at sea, and marine pollution prevention.

Port State Control (PSC) as a matter of fact is not a new measure as the origin could be twisted from the first international convention for the safety of life at sea adopted in 1914. This convention contains a provision calling for the control of ships while in ports of contracting governments and from then on one can find similar provisions in most international conventions dealing with the safety or pollution prevention in the field of shipping.

5.4.2 Sovereign Jurisdiction

International law has always recognised the sovereign jurisdiction of coastal or port states over their territorial sea and internal water. The inclusion of the “no more favourable treatment” clause in maritime safety and pollution prevention conventions, beginning in 1973 with MARPOL was the most convenient means to enable port states to exercise control which was not really absolute.

But in May 1994, a new Chapter XI was added to SOLAS, one regulation of which makes it possible for port state control officers to check on operational requirements “when there are clear grounds for believing that the master or crew are not familiar with essential shipboard procedures relating to the safety of the ship”. The new chapter entered into force on 1 January 1996.

5.4.3 Liberia Not Targeted for the Paris Memorandum of Understanding (MOU) List

Many accidents have occurred in the heavy traffic areas along the European coasts most of which would have been prevented. In any case it showed that substandard shipping was still very much in existence.

The Paris Memorandum of Understanding (MOU) authorities made up of fourteen partners discovered that more stringent control was necessary. The economic and environmental concerns in Europe were stifling their shipping interest.

Great majority of ships calling at European Ports were regional, but, the total number include vessels from all port of the world. The serious deficiencies appear to involve vessels from developing countries.

However, it is important to make a notification here that the open registry record is mixed with some open registries, like Liberia showing exceptionally good record.

Table 11 The Annual Report on the Paris MOU on Port State Control, 1994.

Number of bar diagram	Flag state	Number of detentions 1992-94	Total number of ships 1992-94	Detention % 1992-94	Average detention % 1992-94	Excess of average % 1992-94
1	Syrian Arab Republic	29	84	34.52	9.60	24.92
2	Cuba	24	74	22.43	9.60	22.83
3	Honduras	129	431	29.93	9.60	20.33
4	Romania	83	291	28.52	9.60	18.92
5	Morocco	25	113	22.12	9.60	12.52
6	India	40	191	20.94	9.60	11.34
7	St. Vincent & Grenadines	149	722	20.64	9.60	11.04
8	Egypt	30	150	20.00	9.60	10.40
9	Turkey	117	623	18.78	9.60	9.18
10	Iran	15	81	18.52	9.60	8.92
11	Lebanon	13	71	18.31	9.60	8.71
12	Malta	258	1431	18.03	9.60	8.43
13	Cyprus	399	2591	15.40	9.60	5.60
14	Portugal	15	98	15.31	9.60	5.71
15	Panama	316	2442	12.94	9.60	3.34
16	Algeria	15	130	11.54	9.60	1.94
17	Brazil	10	87	11.49	9.60	1.89
18	Vanuatu	15	137	10.95	9.60	1.35
19	Bulgaria	20	184	10.87	9.60	1.27
20	Lithuania	18	166	10.84	9.60	1.24
21	Greece	145	1364	10.63	9.60	1.03
22	Latvia	27	255	10.59	9.60	0.99
23	Estonia	24	241	9.96	9.60	0.36

Source: Maritime Operations Department of Liberia, 1996

The Paris MOU on Port State Control, Report for 1994, list flag states with detention percentages exceeding the three year rolling average detention percentage, as states to be targeted as priority cases for MOU inspection in 1995/1996. Liberia is not included in the MOU list.

As just indicated Liberia is not included in the European MOU list of the world substandard fleets because the bulk of the ships under its flag are the huge American super tankers including other vessels owned by top ranking shipowners whose vessels are subject to the stringent safety programs administered by the Liberian Regime for the safe operation of these ships.

Let it be mentioned here that prior to the organization of the Paris MOU, the USA had already introduced stringent port state control inspections on vessels entering its water. The author would also like to mention that there are three safety directed programs that have had the Liberian registry prominent for their enforcement and compliance with all requirements of the international maritime conventions.

First, the marine safety inspection program was instituted in 1971 to ensure that all Liberian ships are boarded and inspected by a qualified nautical inspector, on an annual basis. These inspections, which complement the class surveys, are directed at navigational aides, availability and operation of survival and safety gear and manning.

Second, over the past twenty years, intense scrutiny has been imposed over the licenses, maritime training degrees and diplomas, certifications, sea service, and medical qualifications of all Liberian seafarers.

The third program involves the rigid review of all application to register ships in the Liberian Registry. These three make a major contribution to the safety of the ships of the Liberian Registry.

5.4.4 Problem Faced by Port State Control

In general, there are other weakness pointed out regarding Port State Control (PSC) and that is the failure of flag states to take appropriate action when advised by port states. Added upon that is the PSC Inspectors inability to look to the structural strength of vessels and the obligations to accept the licenses and certificates of officers and crew. They do not have the ability to check the veracity of such documents.

Another problem is the budgetary constraints faced by maritime authorities responsible for port state control particularly in the case of unilateral control which may hamper the efficiency of the enforcement effort.

5.4.5 Impact of Regional Port State Control

Liberia since 1992 has been trying unilateral control of foreign vessels visiting its ports but has been less efficient because of budgetary constraints.

Hence the most pragmatic solution is the regionalization of port state control under the auspices of the IMO. Regionalisation takes advantage of the collective strength usually found in many areas sharing the common maritime interest. In this regard, IMO plays a central role in effort to co-ordinate the establishment of regional co-operation on port state control globally.

Therefore the Ministerial Conference of West and Central African States on Maritime Transport (MINCONMAR) was set up to be the co-ordination body for the implementation of port state control in the sub-region.

As its primary objectives, it aim to foster and promote a regional co-operation to develop maritime programme through harmonisation and co-ordination of the member states, and also for the promotion and development of an appropriate machinery and bodies for the implementation of maritime transport.

After assessing the present situation in the control of ships, west and central African states lack such regional co-operation system on port state control. In view of the above, the Swedish Centre for Coastal Development and Management of Aquatic Resources (SWEDMAR), under the sponsorship of the Swedish International Development Authority (SIDA) gives fellowship for study to stimulate interest for the eventual establishment of regional co-operation on port state control in West and Central Africa.

Two countries, Cote d'ivoire and Nigeria was considered initially for such study with Ghana following later.

It is so unfortunate to mentioned that Liberia which should have been in the fore front for such study was excluded, partly because of the civil unrest that has narrowed and overshadow international attention to other developmental issues in the country.

As mentioned earlier, the real gain from regional co-operation is to pool resources because port state control is a heavy financial undertaking for a single developing country even like Liberia.

For example where there is a shortage of inspecting officers to carry out control, some organisations like the navy, coast guards with professional expertise could be provided to carry out inspections on ships. The exchange of professional and

expertise between countries of the sub-region could enhance the progress of maintaining vigorous control on ships visiting a particular national port.

5.4.6 Comments

Briefly, the author would like to mention the less co-operation received from the Bureau of Maritime Affairs in Monrovia, Liberia concerning port state control activities prior to his enrolment at the World Maritime University.

Even though the Bureau designated its own officers to exercise port state control inspection during ships visit at the National Free Port of Monrovia (NPA), it was not fully supportive in providing the necessary logistics to these officers to carry out their job.

It could be that most of the less co-operation received could be attributed to the interruption of the so called West African Peace Keeping Force (ECOMOG) who was responsible for the security of the nation since the inception of the Liberian civil crises including the national ports.

Now, it is a different era, there is now a constitutional elected government in Liberia, therefore all efforts should be made by the maritime authorities in restoring law and orders in the various ports of Liberia while we witness the gradual departure of this force.

The port authorities should not only considered the port for loading and discharging good but should considered the conditions of ships that visit its ports as 95% of the foreign trade of the sub-region passes through these ports.

Regardless of the age and conditions of these vessels, they are still found in our territorial waters and sea ports, therefore, the ports should be regarded as one of the most important industries and revenue earning source for the country.

The Government should try and make Liberia play a pivotal role in such regulatory international matter like port state control since infact she is one of the largest or now the second largest open registry in the world.

If Liberia is fully included in the regional port state control efforts, basing on her position in the maritime world, she could even fight to be the secretariat for an established port state control in the region.

5.4.7 Recommendation

The Liberian Bureau of Maritime Affairs should review the national maritime legislation to see if there is a need to add or to change some part of the present maritime law that could be suitable to the present need of the country.

The port authorities should genuinely co-operate with the Liberian Bureau of Maritime Affairs in helping to regulate the types of ships calling at Liberian Ports. They should make it an obligation and responsibility to work hand in hand with the port state control officers designated by the Bureau to carry out safety inspection on vessels visiting the Liberian Ports. Also, a reporting system like radio communication could be establish between the port authorities and the maritime administration to facilitate in the reporting process of substandard ships arriving in ports.

The Bureau must strive to set up port state control based on an infrastructure with highly motivated and trained personnel who are familiar with the international conventions. Therefore the training and education of port state control surveyors should be one of the prime target in order to have an effective port state control in the country, in the region and in the global marine environment.

Last, but not the least, the Bureau should be considered in its safety measures to set up a Maritime Safety Directorate within its maritime administration locally. It will be responsible to design safety measures that will increase the effectiveness of the PSC Officers in the implementation and enforcement of Maritime safety and marine pollution regulations from ships.

It is not only enough for the Bureau to create a Maritime Safety Section locally in the maritime administration, but also to support it financially if honestly the aim of such a safety directorate is to maintain safety standards within the Liberian Ports.

5.5 The Role of Technical Advancement

5.5.1 Introduction

The role of technical advancement in the shipping industry can be seen from areas such as information technology, communication, vessel types, design and operation, mobile satellite communication technology including computer technology.

As a whole, the development in technology has an impact on the shipping industry where open registries activities are being conducted. Open Registries Nations could benefit from these technical advancements because this development has made ships to be capable and safe enough to meet the terms of international seaborne trade. The great big size, speed, the sophisticated navigational aids are just few among the tremendous technical advancement of today's shipping world.

Shipping is a servant of sea-borne trade and Open Registries Nations, one like Liberia, have served major shipowners by providing the necessary opportunities to enable them to comparatively participate in this dynamic ever changing industry.

This chapter will touch on the development in technology in the various areas mentioned above and also the impact it have had and will continue to have in this industry.

5.5.2 Information Technology

The Author starts with information technology. Information technology (IT) which is being used world-wide in many industries includes also that of shipping.

The Classification Societies who will be responsible for the information flow will interact with builder, manufacturer, owner/operator and maritime administration.

They collect, process, store and distribute large amounts of safety-related information. In order for the classification societies to perform their services, both regarding internal productivity and interaction with clients, they need to handle information in an effective, inventive and fast manner as these are essential elements in their work. To share collective information within the industry, will save time and money and enhance safety at sea.

Vessels under the Liberian Registry are provided with these information via the Classification Societies to enhance safety at sea.

The IMO initiative to establish an International Ship Information Database (ISID) is the first step towards an international efforts toward high tech communication.

Most of the data will be available from different sources. Technically, it is quite feasible to connect these databases, consolidate their contents and distribute the result world-wide. Safety is surely deemed to be increased because of the availability of these databases.

5.5.3 Computer Technology

The ease with which computerised databanks give us information is having a tremendous impact on the way we live and conduct our business. Much of our work has been changed, it can be done by machine.

The new system is a wonderful means of record keeping, data storage and sophisticated communications. Data communications software continues to be introduced to the shipping industry, which will hopefully enables mariners to be in regular contact with officers and homes.

For example, shipping requirements are now passed to the dispatcher electronically, who in turns transmits them electronically to the ship's computer with whatever additional information is deemed necessary.

Almost instantaneously, the dispatcher receives feedback from the ship, which effectively close the loop and sets in motion the necessary arrangements. Most large companies today utilise very sophisticated information management and data processing systems, which have really become indispensable to the function of our business world.

The E-mail and the internet have made modem communication less of a mystery and opened up the concept of a data communication.

It is reported that a growing library of software suitable for shipmanagement is available, covering everything from project appraisal and capital allocation, to cargo scheduling, to machinery monitoring, to stores inventory control, to personnel management.

With no doubt, shipowners who register their vessels in open registry will definitely need these data communication to keep informing and be informed on customer wishes to meet their demand. This could provide their chances of being effective in the competition faced from other shippers.

5.5.4 Radio Communication

Inadequacies of radiocommunications at sea, dealing with emergency were becoming clear but with the expansion of world trade with more ships, reliance upon a distress system which depended upon ship to ship communication combined to place an intolerable load upon the traditional terrestrial radiocommunication system.

To solve this problem, IMO harnessed the most up to date land based satellite available which resulted in the setting up of INMARSAT in 1979, under whom a maritime satellite communication system was built up.

An International IMO Conference was held in 1973 where plans was initiated for a world-wide co-ordinated distress system and this evolved into the Global Maritime Distress and Safety System (GMDSS). Co-ordination of established terrestrial radiocommunications and advanced technology enabled the GMDSS to be introduced so as to cover every ship irrespective of its position in the world.

5.5.5 Mobile Satellite Communication Technology

The advances achieved thus far in mobile satellite communication technology have particularly benefited the maritime and aviation sectors. Super communication system that ensures speed and economy are critical to the efficiency of the maritime sector. Owners of vessels or even providers of land based transport services are finding the new technology a useful asset in the development of their business.

The adoption of The International Mobile Satellite Organisation (INMARSAT) within GMDSS has been the option of the shipowner. GMDSS is being viewed by many shipowners in a more positive lights, as an opportunity to improve safety and in some case cost effectiveness of their ships at sea.

The economically priced INMARSAT-C in particulars, once fitted as a means of complying with GMDSS has been found to offer advantage in the ease of use and cost savings for messaging communications. For the shipowners, the choice of existing and planned satellite services will result in a dramatic change in shipboard culture.

5.5.6 Technology on Vessel Types, Design and Operation

Touching a wide subject which is beyond the scope of this dissertation, the author will briefly touch on the technical advancement on vessel types, design and operation. The technical improvements changed shipping from being a speculative business to being a service industry.

The development in this aspect followed the requirements of modern specialised vessels derived from general cargo ships. This development also followed the requirements of machinery spaces influenced by the economics, as well as the regulations, of tonnage measurement. Continuous technical improvements increased power, reduced the size of the engines and fuel storage requirements and made more space for cargo. These improvements reduce cost, widened the scope of sea transport, enabling low value cargoes to enter international trade.

Specific areas specialised in exporting a single commodity which led to more and more specialised ships types and designs.

Over three decades now, there has been tremendous development in marine propulsion, hull design, navigation and manoeuvring instruments and equipment, cargo handling and shipboard automation.

During the recovery period, a period of booming economy, the tendency in shipping was to increase the cargo carrying capacity of the vessels since the cost of fuel was accounting for small amount in all cost of a ship. The cost was dominated by handling costs.

Thus the technical development and innovations were intended to increase the cargo carrying capacity of ships or the cargo handling equipment in order to minimise the handling cost.

5.5.7 Conclusion

From the 60s till now automation has undergone tremendous development, influenced by the development in computers technology and artificial intelligence science. Its progressive introduction on board ships has improved navigation and the control of vessel.

In the future crew will be able to contact whom they like, when they like, at an ever more affordable price.

Liberia a major flag state operating open registry, will continue to benefit from the impact technology has on the shipping industry in the areas of construction, communication , operation and safety.

5.6 Safety Standards on Liberian Registered Vessels

5.6.1 Introduction

Long time ago, the fleets of open registries have been seen by their critics, famous amongst whom is the International Transport Federation (ITF), as being the same with sub-standard shipping both in the sense of their vessels not meeting the international legal requirements for the technical seaworthiness of ships and in the sense of employing poorly qualified crew because of the fleet's poor accident records.

There will always be a number of shipowners in any fleet, irrespective of registry, who would not observe the spirit of safety regulations in force.

5.6.2 Liberia's Record for Safety

Flag Administrations are often measured for their safety standards according to their vessels loss ratio and whether they are targeted by Port State Control regimes.

In the Liberian case, it is a different story as she realised quite earlier that adopting and maintaining a high safety standard could boost the spiral upward movement of its Open Registry to keep it attractive and competitive in the International Shipping Industry.

As mentioned earlier in previous chapters, this chapter will go into details to outline various points that contributed to Liberia's excellent safety record. These points are in respect related to measures taken by the Maritime Authority to maintain and improve safety standards.

- Liberia has been required to comply with standards of international conventions to which she is a party, including the ISM Code, SOLAS, MARPOL 73/78 etc. The

Administration carried out policies and also maintain policies on safe navigation and clean seas through active participation at the International Maritime Organization (IMO). This step involves deliberation of maritime safety issues at major IMO committees, sub-committees, working groups and correspondence group which lead to the development and implementation of convention requirements. The Administration is trying its best to make the upcoming IMO requirements understood and foster their early implementation. Already seminars have been held globally on the new STCW convention and the ISM Code.

- There are requirements for annual, quarterly and special inspections of ships in the Liberian registry. The inspections are performed on each ship by Liberian Nautical Inspectors in ports around the world. These inspections are not intended to duplicate societies statutory surveys performed by the classification societies recognised by the Administration. These inspections focus on the operational aspects and the overall maintenance of the ship.
- However, these inspections also provide valuable oversight of the statutory services provided by the Classification Societies recognised by the Administration and satisfy the verification and monitoring requirement by IMO Resolution A. 739.
- Coming to the maintenance of statutory certificates and statutory surveys, the recognisable Classification Societies appointed by the Administration carried them out. These survey records are usually asked for and looked at during the time when the vessel is registering, upon a request to postpone a survey or dry-docking, when there is casualty in the event where some of the convention requirements have been violated relating to the condition of the ship or its equipment, the ship is usually detained in this case. Hence, the performance of the

Classification Society, is the oversight responsibilities of the Liberian Administration.

- Marine notices and technical advisories are distributed to inform shipowners, ship operators of Liberian Flag Vessels and Classification Societies on current developments in Flag State and/or Port State requirements, and those changes that will reflect on the operation of the ships.

5.6.3 Report on Casualties on Liberian Registered Vessels

Coming to casualties, the marine casualties investigation is conducted in accordance with the maritime law and maritime regulation of the Republic of Liberia.

This investigation is actually administrative in nature but it strive to examines the causes of difficulties experienced, possible means of avoiding them in the future, possible violations of law and possible faults or failures, on the part of personnel, shipowners or operators which might require action in respect to licenses, certificates or documents. It is obliged to report or cause to be reported, the circumstances and proximate cause or causes of marine casualty and other factors that contributed to the incident. The findings from these report are received by the office of the author in Monrovia and a forward transmission is carried out to the Secretariat General of the International Maritime Organization (IMO).

When this report reveals evidence of any criminal conducts on the party concern, the Ministry of Justice in the Republic of Liberia will handle such a case and take appropriate action.

5.6.4 Requirements for Holding Liberian Certificate

In accordance with the international convention on standards of Training, Certification and Watchkeeping (STCW) 1978, as amended in 1995, all revised and upgraded license certification of seafarers must comply with this convention in addition to the Liberian Maritime Law and Regulations as required.

Familiarity with the Liberian National Maritime Legislation is required for senior officers who want to apply for an officer's certificate of competency to the management level.

As for seafarers beginning their sea going training or service and applying for original Liberian Seafarers Identification and Record Book, must show evidence that they have received the required basic training of instructions in personnel survival techniques, fire protection and fire fighting, elementary first aid, personal safety and social responsibilities.

5.6.5 Holder of Equivalent Liberian Certificate

For accountability, the Administration requires that personnel aboard Liberian Flag vessels hold Liberian licenses and documents issued by certain Administrations which are recognised by the Liberian Administration as the basis for issuance of equivalent Liberian Certificates of Competency.

Below are the names of some of the Administrations whose licenses and documents are usually recognised by the Liberian Administration.

EQUIVALENT CERTIFICATES

Argentina	Hungary	Romania
Australia	India	Russian Federation
Belgium	Indonesia	Singapore

Brazil	Ireland	South Korea
Bulgaria	Israel	Spain
Canada	Italy	Sweden
Chile	Japan	Switzerland
Croatia	Mexico	Taiwan
The Czech Republic	Myanmar	Thailand
Denmark	New Zealand	Turkey
Ecuador	Norway	Ukraine
Egypt	Pakistan	Arab Emirates
Finland	People's Rep. of China	United Kingdom
France	Peru	United States
Germany	Philippines	Uruguay
Ghana	Poland	Venezuela
Greece	Portugal	Vietnam
Hong Kong		Yugoslavia

Liberian Certificates may be issued to certificate holders from major maritime nations whose educational system and examinations are found acceptable. National certificates are from the following countries listed above.

CONSIDERATION FOR
KEEPING LIBERIAN FLAG PRE-EMINENT

6.1 Flag State Implementation (FSI)

6.1.1 Introduction

Flag States are responsible for certifying and guaranteeing that their ships conform to the various standards contained in IMO Conventions which they have accepted. It is true that IMO has been successful in setting and updating standards but, has not been equally successful in supporting and ensuring their global implementation.

Any state which confers its nationality upon a ship and authorises it to fly its flag, has the right to subject that ship to its laws. This will make it possible to impose and maintain standard of design, construction, equipment, maintenance and operation.

In fulfilling this task, the Sub-Committee FSI need to keep in mind that not all the Flag States are able to respond to the various obligations under IMO instructments because of lack of resources.

Regrettably it is beyond argument that not all Flag States live up to their responsibilities. Figures and detentions revealed by Port State Control inspections in previous chapters clearly shows that.

6.1.2 Difficulties in Compliance

It is true that States have experienced difficulties in complying fully with the provisions of the IMO instruments. It was therefore necessary for IMO to make sure that the existing regulations are fully complied with effectively. To this end, the Maritime Safety Committee, at its 61st session in December 1992, responded to the unanimous recommendation of the joint MSC/MEPC working group on Flag State Compliance and with the concurrence of MEPC at its thirty - third session in October 1992, approved the establishment of the present Sub-Committee named "Flag State Implementation" (FSI) to deal with the problem of implementation and enforcement faced by developing countries most especially.

No Flag State has the resources to police its fleet on a continuous basis. The only thing it can possibly do is to insist upon periodic surveys and to undertake ad hoc inspection if it learn that a ship has suffered a casualty or for some other reason such as Port State Control Inspection, it suspects that its ship no longer complies with internationally agreed standards.

Even though it appears difficult to eliminate substandard ships because of the difficulty in undertaking international negotiations, based upon the fact that some Flag States are failing to honour their existing obligations, but a start has been made and it is to the credit of IMO that it has set up a Sub-Committee to address this issue.

6.1.3 Liberia an Exception

Good shipowners will maintain the seaworthiness of their ships regardless of whether a Flag State periodical survey is imminent.

In the case of Liberia as a major Flag State offering Open Registry to world shipping, it has to a great extent managed to enforce most of IMO's Instruments, a fact that can be verified from its high safety standards record. This fact can be verified by IMO, the international body responsible for shipping matters.

6.1.4 Weaknesses of Flag State Control

There are other weaknesses of Flag State Control to be mentioned, but there are rooms for improvements. First, the author would like to state the genesis of the problem. When the International Conventions were originally drafted, most of the world's merchant fleet was owned by and flew the flags of the world's major maritime and trading powers.

These States have already established survey and inspection of their ships as a matter of public policy aimed at protecting the safety of the crews and passengers. Such standards were not immune to commercial pressure. States had little or no direct financial interest in shipping and could not apply and enforce standards in the interest of public policy without feeling any pressure to maintain or enhance their merchant fleets, but all that has changed.

The situation today is that few states regard it as consistent with their national status and dignity to be without a register of national shipping of a large size as possible while some regard such a register as a useful source of income.

6.1.5 Improving Flag State Performance

To improve on Flag State performance, there is an objective which is to eliminate flags of convenience as so defined. As it has always being on IMO's agenda, it is aimed at encouraging the removal of discriminatory or unnecessary actions by governments affecting shipping engaged in international trade so that shipping services rendered to the world should be without discrimination.

This effort could pay off only if all Flag States discharge their responsibilities to the full or else discrimination if only in terms of Port State Control targeting is inevitable.

Furthermore, there will be need for some major and rapid improvement which could be achieved by simple persuasion. Discrimination will have to be undertaken both in self defence by Port State Control and Coastal States and also by IMO in the general interest of safety.

It is hoped that persuasion, backed by world-wide public opinion will suffice or else, it is considered that in the very near future IMO will have to consider further initiative.

Such initiative would be the publishing by IMO flag by flag information provided by Port State on the extent to which defects are found in ships on inspection. This effort will not only bring pressure to bear on national pride, but also commercially because insurers, charterers and shippers will take such findings into consideration when contracting with owners of ships flying flags with a record of being substandard.

6.1.6 Port State to Pick Up the Pieces Where Flag State Failed

Port States in their own vital interest have been obliged to take on much wider and the expensive task of picking up the pieces where Flag States have failed.

Even though it is basically argued that Port State Control (PSC) is no substitute for effective Flag State Control, the author believe that there is a strong case for strengthening Port State Control, at least for the next few years, both as a means of drawing attention to the weaknesses of Flag States and to put pressure on them to improve their performance.

6.1.7 The Training of Port State Control Surveyors

The sub-committee further discussed strategy for Port State Control Surveyors Training and other assistance through IMO. This could be in the form of bilateral/multilateral technical co-operation and inter-regional assistance.

There has been serious recognition for surveyors training which depend on the situation in any particular region and should be established by the countries concerned.

The regional co-operative body established through each memorandum of understanding should determine the scope and details of its training objectives and training programme.

Practicable funding implementation methods for general training plan through IMO should go through the following procedures:

- proposals for the training plan should be developed by the regional co-operative body and should be submitted to IMO.
- the proposals should be considered by the FSI Sub-Committee and would be endorsed for further action.
- fund raising activities would be undertaken by the IMO

- the proposed plan should be implemented by the regional co-operative body with the necessary co-ordination and further assistance by IMO.
- for bilateral/multilateral technical co-operation, funding should be provided through bilateral or multilateral arrangements within the regional co-operative body.

Inter-regional assistance could also be provided under the arrangements between regional co-operative body.

6.1.8 Delegation of Authority by Flag States to the Classification Societies

It is for the flag state to ensure that its maritime administration is capable of carrying out its responsibilities of compliance

Even though the Flag State has the right over the responsibility to ensure that the international standards are properly implemented, it may delegate some of its functions to other organisations such as Classification Societies.

Under the provisions of regulation I/6 of SOLAS 74, relevant articles of Load Lines 66, regulation 4 of Annex I and regulation 10 of Annex II of MARPOL 73/78 and relevant articles of Tonnage 69, says that many Flag States authorise organisations to act on their behalf in the surveys and certification required by these conventions.

There must be control in the assignment of such authority in order to promote uniformity of inspections and maintained established standards. Therefore any assignment of authority to recognised organisations should fulfil the following:

- to make sure such organisation have adequate resources in terms of technical, managerial and research capabilities to accomplish the task being assigned

- have written agreement between the administration and the organisation
- specify instruction in the event that a ship is found not fit to proceed to sea without danger to the ship or persons on board, or presenting unreasonable threat of harm to the marine environment
- specify whether the administration's standards go beyond convention requirements in any respect
- maintain records which can provide the administration with data to assist in interpretation of convention regulations

6.2 The Role of Classification Society

6.2.1 Introduction

Classification Societies were originally established to service marine underwriters along the lines of a modern day credit rating agency, providing expert technical judgement.

The role of the classification societies (IACS) is in no doubt a significant role in helping to keep the Liberian Flag pre-eminent.

Recognising that shipping is of an international nature, it enables member states to meet collectively for the purpose of producing international conventions, instead of producing requirements individually and in isolation.

Liberia, a major Open Registry nation, have ratified almost all of the major International Maritime Organization (IMO) Conventions. These International Conventions reflects the practice of the majority of individual administrators

including the Liberian Administration, in so far as they address safety aspects, other than hull structure and essential shipboard engineering systems, thus implicitly recognising the experience and expertise of classification societies in these fields.

The rapid growth in sea borne trade over the last century or so, and the market pressures on the societies have caused it to evolve into a well less defined institution as far as objectives are concerned. They should be competing on technical excellence, helping shipowners improve their standing and helping them maintain the value of their assets.

6.2.2 Class of Classification Societies

However, too many inspections are currently being undertaken by various classification societies in the market, example would be the weak societies, as a result, this is creating lack of trust from the shipping community in the classification societies.

Like unscrupulous shipowners, the weaker class societies are not to be bothered by tighter rules and regulations. A certificate after all, is nothing more than a piece of paper with a significant and perhaps a logo. For conscientious societies like the types Liberia employed, every new rule means a major investment in financial, human and technical resources.

The weaker societies here, are defined as those societies which are not members of the International Association of Classification Societies (IACS) while the major classification societies are the opposite.

When one look at the world's new building, the so called major IACS members account for almost all of the new contracts. To be able to formulate rules and design concepts, initiate quality control procedures, undertake the testing of hardware and

conduct rigorous tests of the vessels and its appurtenances as demanded under the contract is no easy undertaking.

It requires years of accumulated experience and expertise as well as massive investments in technology in both hardware and software, which a weaker society may not be able or willing to undertake.

As far as the major classification societies are concerned, their rules are not diverse enough for a responsible and reputable owner to do anything materially different, irrespective of which class his or her ships are entered with.

6.2.3 Delegation of Statutory Responsibilities by Liberia to the Classification Societies

To avoid the problem of the weak societies, the Liberian Administration have selected the major Classification Societies to undertake statutory surveys and avoiding the weaker societies.

Liberia, in this light has employed the services of the major recognisable Classification Societies to carried out statutory surveys and maintenance of statutory certificates. This is done in addition to the required annual, some quarter and special inspections of ships in the Liberian Registry performed by Liberian Nautical Inspectors in ports all around the world.

In view of their retained responsibilities and obligations, the decisions by administrations as to what statutory work to delegate and to which organisation is crucial.

6.2.4 Unified Standards

Coming to the discussion on uniformity, as in the case of unified requirements regarding classification aspects, IACS Working Groups prepared for the approval of the IACS Council Unified interpretations of International Conventions and related Codes and Resolutions. Among these are the IACS Procedural Guidelines for the International Safety Management Code.

The International Convention requirements contained in the various International Conventions and related Codes and Resolutions, are produced under the auspices of the IMO where they are formulated after detailed debate by delegations representing some 152 member states.

The experience in formulating these international conventions and codes is fully shared with IACS so as to reach agreement on interpretation as necessary of convention requirements. Such agreements is essential to avoid problems which would have been otherwise caused by different interpretations being applied by each society on behalf of the same administration.

6.2.5 Monitoring the Organization

In view of its responsibilities and obligations under the IMO Conventions, a delegating administration must have some means of monitoring the organisation to which it has delegated authorities to ensure that the work is being adequately and satisfactorily performed.

Therefore it is vital that each administration is able to verify that the organisations to which it delegates statutory surveys and associated design appraisal, have the capacity to carry it out satisfactorily.

It therefore follows that each delegated organisation should have a satisfactory quality system such that it may demonstrate, to all concerned, the quality of its service. In this respect, IACS has set up a Quality System Certification Scheme (QSCS).

For monitoring performance, in the case of the Administration of the Liberian Registry, there are over seven hundred nautical inspectors world-wide, who do not duplicate, but also inspect Liberian registered vessels to ensure the Classification Societies are doing their delegated job effectively.

6.2.6 ISM Code

The ISM Code has all to do with safety and Quality Management which is an integral part of the shipping industry and shipping companies. It is in no doubt going to help improve standard in safety matters pertaining ships flying open registry flags for which Liberia is not an exception.

The effect of the human element on safety has recently been brought to the fore front by a series of casualties in which human error was a major factor. The ISM Code, which focuses on the safety aspect of shipmanagement process both on land and at sea, has been perhaps the most significant consequences of these disaster. It is aimed at ensuring safety at sea, prevention of human injury or loss of life, and avoidance of damage to the environment, in particular to the marine environment and to property.

The implementation of the ISM Code on a mandatory basis as part of the safety of life at sea (SOLAS) Convention now offers a unique opportunity for the maritime community to bring about a new safety culture, and greater, consistent compliance with international rules and regulations, this being a central objective of the ISM Code. It is not like the prescriptive safety requirements which owners and operators have been used to in the past, this code imposes an obligation on owners and

operators to set their own safety management objectives by developing, implementing and maintaining safety management systems, emphasising the role of sound management in safety and pollution prevention.

The ISM Code is being introduced in two stages, the ISM Code will embraced 90% of the world's carrying fleet. The first phase requires the auditing of some 18,700 ships by 1998. By the year 2002, a further 20,700 ships will require ISM Code Certificates. In addition, some 8000 shipowning and operating companies will need to be audited.

As stated earlier, only few administrations will be in the position to undertake the auditing themselves and it is expected that they will authorise classification societies to issue ISM Certificates on their behalf. However, many flag administrations have yet to announce their intentions for the implementation of the ISM Code. Lloyd's Register (LR) and other IACS members are seeking authorisation from flag administrations to act on their behalf. These authorisation have already begun with LR currently being recognised by nearly thirty administrations. LR takes the view that there are very few organisations outside IACS likely to have the resources to carry out this work on a world wide basis therefore flag administrations are urged to restrict delegation to organisations that meet the proper criteria.

In handling the ISM Code Certification, its members will follow the specially developed procedural requirements mentioned about earlier to be implemented with effect from January 1996. Their model training courses and guidelines for auditors will help them to ensure uniformity among its members to the extend where if two or more members are involved in ISM Code Certification for the same company, for example in a multi-flag fleets, IACS members have mutually agreed that a Document of Compliance (DOC) issued by one member will be accepted as evidence of compliance by another.

There should be no conflict of interests even though the two types of certification have different purposes and objectives, they are of course complementary. The satisfactory condition of the ship in accordance with classification and statutory requirements-while being highly dependent on an effective implementation of safety management systems by the ship operating personnel is actual a vital source of the evidence that is sampled during the ISM Code auditing process.

The implementation is a long process and the extent it affects the day to day operations of shipping companies both ashore and onboard its ships, will come as a considerable surprise to many operators.

6.2.7 Comments

Classification Societies have come under close scrutiny and have been subject to much criticism due to number of high profile casualties which have resulted in tragic loss of life and serious damage to the environment.

As standards and inspection organisations, they are often the first to be called to task for major mishap.

Such attention to the societies has often been the result of a lack of understanding concerning their actual activities and responsibilities, and a failure to high-light adequately the positive role which they play within the marine industry.

Their role is like the self - policing of professional association membership, if for example a Liberian registered vessel is a member of a particular class, then, it entails that membership rules are properly adhered to.

The Liberian Government among other governments, including IMO are not making life easy for class nowadays. The promulgation of rules and regulations certainly

requires a lot of effort, but the enforcement of these rules is mostly left to the society via the flag state administration.

6.3 Effect of Corrosion on the Age of Ships & Possible Solution

6.3.1 Introduction

The safety of ship is known to decrease with age due to corrosion and accumulated fatigue cracks. Statistics of casualties show a higher incidence of structural failures amongst ships older than 15 year old. Structural failures are also associated with a number of mechanisms which relate to the original design, structural condition, ship operations and service environment. Structural safety of ships clearly reduces with increasing age as corrosion and fatigue accumulate over time.

The industry needs a facility which gives a consistent assessment of ships structures, such that defects and failures can be identified and corrected with a view to ensuring that a minimum level of structural safety is maintained. There is now “Ship Structure Management System” which is aimed at improving the current reliability standards of ship structures through the implementation of a Ship Management System.

A ship structural management system is an integrated package which provides an efficient and cost effective means of maintaining a uniformity high standard of safety throughout the ship’s life. The proposed system uses results from a number of activities such as a hull stress monitoring and records of in-service inspections.

The aim of ship structural management is to monitor continuously the condition and structural response of a ship throughout its life and to control reliability through the optimisation of maintenance and operational procedures.

6.3.2 Benefits of Structural Management System to the Marine Industry

It is therefore reasonable to suggest that special attention should be given to older ships in order to maintain the levels of safety within acceptable limits.

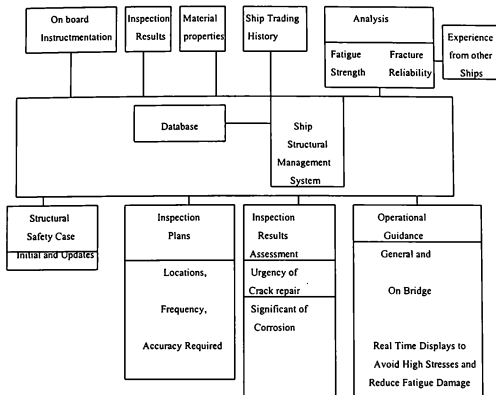
In practice the structural management system will achieve this by recommending enhanced inspection plans and guidance for limitations on service loading conditions in order to reduce total stress level in the ship's hull.

The benefits to the Marine industry are:

- improved structural safety and fewer losses
- cost effective inspection and maintenance
- improved risk assessment for underwriter
- improved feedback from inspections and hull stress monitoring
- better understanding of ship structural behaviour
- improved uniform standards for construction and maintenance

Below is a diagram of a ship management system:

Figure 1 Ship Structural Management System Flow Chart



Source: Brooking, M.Bartrop, N.Atkins, W.S, 1992

It is recognised that the scope of a management system and depth of detail considered should be tailored to the specific needs of the owner and the specific ship type. It is likely that the first systems to be implemented will be relatively simple; and as experience and knowledge are developed the sophistication will increase. In the long term the shipping industry will benefit from the improved understanding of ship response and structural behaviour.

6.3.3 Possible Solution to the Corrosion Problem

To tackle this problem of corrosion, the introduction of anticorrosive coatings will minimise the ageing problems directly associated with corrosion.

Because the cost of anticorrosive coatings is low, ease of application and their proven ability to prevent the onset and progression of corrosion, often for a major proportion if not the lifetime of a ship, anticorrosive coatings will remain the most economic solution for the protection of seagoing assets for a very long time to come.

6.3.4 Comparative Assessment of Ship Maintenance and Repairs Costs due to Corrosion

If it is intended to operate ships for an extended period of time, comparative assessments of ship maintenance and repair costs between a case where sufficient corrosion control measures are taken should be made.

This kind of assessment is and worthwhile for personnel responsible for ship operation. The personnel responsible for ship operation normally estimate repairs charges and work period before effecting repairs, and give information to the business department personnel for cargo to be booked after the ship repairs.

However, if damage due to corrosion is found out, it will result in a prolonged work period and in some cases such can lead to loss of credit of the shipping company for shippers.

Classification societies had never been lazy in dealing with the problem of corrosion and is making recommendations to personnel responsible for ship operation from time to time that corrosion control measures including the application of water resistant paints be taken.

Unfortunately, however, the negligence is recognising the importance of the problem of corrosion may permit operation of ships with defective structural hull members.

Generally speaking, corrosion progresses at more or is the same rate if structural members are placed under the corrosive environment, thus once damage is found out, repairs for an extensive area of members become necessary imposing quite a heavy burden on owner's economy in terms of repair charges and loss time due to repairs and etc.

In other words, damage due to corrosion and damage due to other causes require different measures for their repairs.

6.3.5 The Use of Tensile Steel Versus Mild Steel

Steel came to be recognised over a century as the only significant hull constructional material for ocean-going ships. Steel had advantages in cheapness, ductility, strength and size of the plate that could be rolled.

Its main disadvantage was its lower corrosion resistance, so it is no accident that several of the major paint companies were established at this time, who do not only offered anticorrosives but also anti-fouling, a problem that became more serious with ferrous hulls.

Steel strength and toughness properties are important parameters which influence the overall structural reliability. The potential life of ships is of course, bound up in the choice of hull construction material.

Even though it was recognised that corrosion rates would be similar to mild steel, potentially requiring earlier renewal of the thinner material, it was fully appreciated

that fatigue life was reduced owing to the higher working stresses, especially under dynamic loading from waves.

Thus there has been an increased prevalence of fatigue cracks in vessels containing high tensile steel, particularly at poorly designed or fabricated connections, sometimes accentuated by local corrosion.

The decision whether to use mild steel against higher tensile steel in certain areas of the vessels is now being made taking account of more factors.

In the last 40 years, more extensive use has been made of high strength steels in ships. High tensile steel will continue to be used, especially in larger vessels, but will require higher standards in design and construction. For example, classification societies are now requiring detailed fatigue strength evaluation for some new vessels, e.g. tankers over 190m length.

6.3.6 Comments

Beside the corrosion effect on the age of ships, the consequent reluctance to order new tonnage has led to a general ageing of the world's fleet; and this seems to be part of the root of the problem. Getting it right at new building pays off in reducing maintenance like anticorrosive treatment in the long run.

The use of Structural Management System is recommended to overcome the diverse problem of corrosion which is a common cause of structural failures that are experienced nowadays in the industry.

Since steel will remain the primary hull constructional material for ocean-going ships for many years to come, effective anticorrosive treatment is a key element in the potential life of a ship.

6.4 The Practicality in Managing Ships

6.4.1 Introduction

The shipowner has the primary responsibility for the standard of design, construction, maintenance, and manning and operation of the ship. It could be an understatement to say a shipowners' attitude toward this responsibility varies.

Nowadays, there are separation of ownership and operational management which have caused some problem with proper co-ordination.

For example, in the past, a major shipping company's design and construction team would work closely with the builder of a new ship, the classification society, the Flag Administration and ship's officers.

This team effort may now not apply, particularly if the owner no longer has his own team, flag work is delegated to the classification societies, the ship's personnel come from a crewing agent where there is little continuity of employment in a particular ship.

6.4.2 Management of Ships

The management of ships in the proper ways depends on a culture of safety, where safety issues are given high priority in the boardroom as well as in the ship. This culture will influence the running of a shipping company and its ships at all levels, including instructions, supervision and training.

Some companies are very conscious of the need for good, well managed ships and sensitive routing, whilst others clearly go for the cheapest options, regardless of the possible consequences.

Commitment to long term initiatives such as new crew training programmes can go some way towards enhancing the reputation of the ship management sector. The lack of training of sea staff which have taken place over the last 12-15 years has resulted in a shortage of qualified personnel and the larger ship management companies are at the forefront of the effort to redress the situation.

Considerable amounts of money are being invested in the training and retraining of sea staff, both in Europe and Asia, in order to ensure that there is a continued supply of personnel both for sea and shore.

The author propose that other developing countries take some initiatives in the effort to also train and retrain staff from sea as well as on land. The benefits of such undertaking will be seen in the provision of qualified marine personnel both on land and on sea. An added benefit will be the enhancement of high quality safety standards in the marine industry.

6.4.3 Standards for the Management of Shipping

Standards for the management of shipping are set out in IMO Resolution A.741(18) which was adopted on November 4, 1993.

This Resolution contains the text of the International Management Code for the Safe Operation of Ships and for the Pollution Prevention, known as the IMO International Safety Management (ISM) Code.

It is understood that consultation is done widely with the industry to encourage the implementation as soon as possible, giving priority to passenger ships, tankers and gas carriers.

In fact it was reported that The Chief Inspector of Marine Accidents, in his report on the BRAER, has already recommended that the provision of the Code should be implemented by the shore management of shipping companies as a matter of urgency before they become mandatory in 1988.

It is also revealed that the UK Chamber of Shipping and the International Association of Independent Tanker Owners (INTERTANKO) that, despite the higher demands on company resources, many of their members have introduced external audits of their company procedures to certify that they meet ISO 9002, an internationally agreed standard covering quality management systems.

Such quality assurance systems do not necessarily guarantee safety but a good total quality management system will incorporate safe working practices both on land and sea.

6.4.4 Third Party Management

The Shipping Companies have challenging future facing the ship manager-the rise of the third party ship management sector has been one of the most significant development in shipping over the past fifteen years.

During this time, the number of companies providing ship management services has risen from just a few to 400-500 companies.

At first shipowners began to use ship managers simply to cut operating costs, today many ship managers offer more sophisticated service to deal with the increasingly complex nature of all aspects of internationally shipping.

Shipping Companies continues to receive criticisms from those in the shipping industry who have never been able to accept the principle of third party shipmanagement. The critics argue that shipping managers have contributed to issue of keeping bad ships owners in business.

6.4.5 The Commercial Interest of Managers Versus Shipping Interest

Commercial interest seem to over shadow the safety interest and the result has most of the time being chaotic. It should be made abundantly clear that it is against the long term commercial interest of shipowners to ignore safety consideration.

Companies dealing with Ship Management are very competitive and they need the required volume of cargo necessary to obtain profit.

To emphasis this, commercial sanctions and administrative deterrents need to be strengthened. This can be done in variety of ways. One could be to take greater account of owners' efforts to improve standards through an adjustment of insurance premiums charged by insurers. The second one could be for P & I Clubs to tighten up the policing of existing legislation through more effective Port State Control.

But it is necessary to bear in mind that all the manager concern is the financial survival while some hope to trade profitability. However, at the end of the scale, there are shipowners who from pride, and a tradition of shipowning, insist upon the highest standards.

All independent shipmanagement companies will from time to time be faced with the difficult question whether to undertake the operational responsibility for a vessel of questionable quality, or to leave it to competitor.

A Manager with too many inferior and shaky vessels will easily obtain a bad reputation, and a manager with sound fleet will be regarded as first class.

The latter kind of ship manager will ensure that its vessels fly the flag of whatever nation seems the most likely to tolerate the lowest and cheapest standards.

This decision is difficult, but, every experienced ship manager knows that unjust as it may be, his company is always judged from the quality and performance of its fleet. The image of any ship manager is again decisive for his potential to obtain future business.

6.4.6 Comments

The message is that ship managers in particular should improve operating standards. The trade association of the ship management industry now has some 40 members representing the majority of ships under third party management.

The International Ship Managers' Association (ISMA) was founded some four years ago by around 30 leading shipmanagement companies based world-wide and of all sizes who believed they needed their own association where they could discuss the problems of their trade and raise operating standards by implementing a quality management standard designed specifically for ship managers.

It is no easy task to implement because the discipline necessary to meet ISMA's requirement for membership, that members implement and are independently audited according to ISMA's Code of Ship Management Standards, are tough.

It is now clearly shown to members that what is involved has a great deal of human and financial resources. Progress is being made at an ever-increasing speed as more members successfully pass an audit.

Moreover, quality management provides everyone with the ideal opportunity to raise ship operating standards while at the same time increasing the degree of control over important day to day tasks and how to respond to emergencies. The overall result of this efforts will be greater control which can result in improved productivity and reduced exposures to casualties.

The author who was Port State Control Safety Officer for the inspection of vessels calling at Liberia's Port, personally encountered shipmanagement Companies who careless about safety matters pertaining to their vessels. They were more eager to make profit at all cost and this lead to the lost of human lives, injuries and abuse to the environment.

6.5 Could IMO Activities on Maritime Safety Help to Keep Liberian Flag Pre-eminent?

6.5.1 Introduction

The IMO was invented nearly 50 years ago by governments fearing that their shipping interests would face widely varying safety requirements in the different ports around the world. The biggest challenge for IMO since its inception has always been to retain the confidence of the maritime community that the organisation exists to serve its need for a harmonised approach.

Shipping is an international business, operated and regulated internationally. There is no doubt that in this context international action is generally more effect than national action. However there are grades of internationalism.

There is the International Maritime Organization (IMO) which embraces many nations. There is the European Community (EC). There are the clubs of European

States which are signatories to the Bonn Agreement and to the Paris Memorandum of Understanding on Port State Control.

Some action needs to be taken by all nations, some are more appropriate for clubs of nations, and some can be taken unilaterally, but it is always necessary to bear in mind the legitimate interests of other States, and that unilateral action by other States could harm a single state even like Liberia in an unacceptable way.

6.5.2 IMO's Efforts to Retain Confidence of the Marine Community for Safety

Meanwhile, the author would like to specify some of the efforts IMO have made through some of its major conventions to meet safety demand for shipping and the environment.

The 65th session of the Maritime Safety Committee (MSC) held in May 1995 was one of the most important sessions of the MSC and this was the first time the Committee have considered so many items of such importance in one single session.

The STCW Conference was held in June and a SOLAS Conference dealing with ro-ro ferry safety was held in November. The comprehensive review of the STCW Convention (Convention on Standards of Training, Certification and Watchkeeping for Seafarers) is certainly the most important item finalised. The new Convention which have already entered into force since February 1997, technically updates and substantially raises the standard and uniformity of marine competence which is one of the crucial points for the overall safety at sea.

6.5.3 The Validity of Certificates Issued by Flag States

One of the most important innovations is the role the IMO could play concerning the validity of the certificates issued by flag states.

In fact all countries will be required to provide detail information to IMO concerning administrative measures that they are setting in place to ensure compliance pertaining to such matters as education and training courses, certification procedures and other factors relevant to implementation, which are no longer left to the will of the administration as was done in the past.

The information provided by parties will be used by the Maritime Safety Board which, with an appointed panel of experts, will appraise the administrator's measures.

These experts will in no doubt put the measures in place, and satisfactory, will approve and list the administration as one which gives full and effect to the convention.

IMO then effectively becomes the guarantor of the administration's procedures and other governments will then be able to accept the certificates issued fully comply with international standards compliance and may be trusted.

This represents a considerable step forward which most of the parties concerned are looking for, and it is hope that this new approach will be profitably used by administrations to restore mutual confidence which is one of the pillar for the successful implementation of this new instrument.

6.5.4 Obligation of Governments to IMO

Incompetent administrations dealt with their requirements incompetently; there were vast difference in the training and certification standards with some certificates not worth the paper they were written on.

But as long as the flag state no matter how incompetent the ship endorsed the certificates carried by those abroad her, other states were bound to recognise these qualifications.

Today the situation have changed. There is obligation on the different governments who are members of IMO who place measures to prove that they have the correct administration, training establishments and certification procedures.

In the absence of such approval, other governments will be perfectly at liberty to refuse to recognise the certificates of the unlisted state. There is no black list as such, but it amounts to the same thing. Parties were requested to communicate the information by August 1, 1998.

6.5.5 World Maritime Day 1997 Secretary General's Speech on Safety and People

A recent stride that IMO has made toward safety was contained in a message from the Secretary General of the International Maritime Organization Mr. William A. O'Neil. His speech was focused on the title "Optimum Maritime Safety Demands a Focus on People"

He argued that people attention should be drawn on shipping safety and the protection of the marine environment.

"All too often we regard human error as something that is inevitable but this is a wrong approach. Accidents do not just happen, they are caused by people making mistakes. If this can be corrected, then accidents and threats to human lives and property will be reduced".

He stressed that the response to an accident has been to change the technical requirements. These changes have sometimes had little relation to the cause of the accident and therefore has done nothing to prevent it being repeated.

He made it clear that this is a problem that cannot be solved by adding more regulations. It requires a change of attitude - the adoption of a culture which puts safety at the top of its list of priorities.

6.5.6 Conclusion

IMO has devoted more and more attention to improve the way Governments implement the organization's standards on ships under their flag and have encouraged the establishment of regional agreements for carrying out ship inspections by port States. Attention is now focused on two initiatives.

The first is the entry into force next July of the International Safety Management Code. This Code was developed by IMO to ensure that shipping companies around the world treat safety seriously. The Code requires a special safety management plan and appoint a senior officer to be responsible for its implementation.

There is a concern that some shipping companies seem to think that the code is somehow voluntary and will not apply to them. The ISM Code is going to be mandatory and to apply virtually to every ship in the world.

Companies which do not have the proper certification, as prescribed by the code, would be in violation of the Convention for the Safety of Life at Sea and could find themselves out of business because their ships will be denied entry into ports around the world.

The author is of the conviction that many shipowners will divert their ships to more vibrant flag administration that are capable of withstanding the pressure from this code.

Based on the excellent safety record Liberia have had over the years, it is viewed as a possible candidate for this challenge.

The second initiatives concerns the 1995 amendments to the Convention on Standard of Training, Certification and Watchkeeping for Seafarers. They entered into force on February 1, this year (1997) and are intended to raise the quality of the seafarers who operate the world's ships.

These two initiatives-the ISM Code and the revision of the STCW Convention-are both concern with people.

These two major developments, combined with other IMO initiatives designed to improve the convention requirements when implemented, will help to ensure that shipping safety improves dramatically in the years to come.

Chapter VII

SUMMARY AND CONCLUSIONS

Since 1948 almost fifty years ago, the Open Registry of Liberia have remain in existence and have ranked on the top as Leader in Registration Tonnage in the Face of Strong International Open Registry Competition.

However, from 1993 till present, Panama has taken the lead and this position over Liberia is looked at as a temporary occurrence that has been due to other political motivations. Also the creation of the Marshall Islands Registry by the International Trust Company of Liberia as a rival registry to Liberia's Registry is a contributing factor.

It is of the strong conviction that Liberia will soon over come these political pressures and other problems faced with the Marshall Islands Registry. The strong position the registry have held over the years could be attributed to the reason of being tailored-made by the American to suit their shipping necessities. It became far more efficient and responsive to business and government pressure than the Panamanian Registry form accidentally to replace lost tonnage after W.W.II.

The long seven years civil crises that engulfed the nation took a great toll on the country. Other interesting economic activities such as the mining of iron ore among other vital priorities was hindered, leaving no other income yielding avenues for the government, save the Liberian Maritime Program.

But now the Liberian Maritime Program is facing Strong International Open Registry Competition from registries like Panama, Cyprus, Marshall Islands and the Bahamas.

The Marshall Islands Registry poses the greatest threat as it was created alongside the Liberian Registry to be a rival registry. Huge number of tonnage is being shifted from the Liberian Registry to the Marshall Islands' Registry from time to time. This is one of the major reason among others that gave Panama the chances to be over Liberia in number of registered tonnage.

The Bahamas Open Registry is worth watching out for. Information gathered from this study on the Bahamas Open Registry suggest that it is becoming one of the fastest growing open registry.

The Bahamas is attracting the major shipowners among whom are the Americans with the huge tankers and cruising vessels. The strategic location of the Bahamas between the North and South America coupled with the stable political atmosphere are also contributing to the attraction of shipowners.

Even though the nation faces all these competition in the registration market, its Open Registry of foreign vessels has remain the only source of income for the government. Considering its size and population of less than 3 million people, the net income annually totalled to 16 to 18 million US Dollars which is quite substantial.

The registry have provided employment for the few qualified Liberian Seafarers and thousand of seafarers world-wide. With very little tax and lower operating costs, the registry provides shipowners with additional net-earnings which could be invested for example in new shipping building ventures.

An essential criteria to be used when comparing nation's paramount importance to the shipping industry and its international administrative organization (IMO) is safety, which is what Liberia has managed to maintain effectively and efficiently

over the years. Being renowned for having a high standard of safety, Liberia has, time and time again, proven to be the shipowners domicile of choice.

The development of the concept of Port State Control (PSC) came up in the Subcommittee of Flag State Implementation (FSI). PSC have helped in carrying out inspection on open registries flag vessels entering ports around the world. This will enhance the compliance of safety standard in the shipping industry. It was established by IMO to deal with the problem of implementation and enforcement faced most especially by developing countries.

The Classification Societies could not be left out in helping governments in their campaign to implement IMO Conventions and Regulations. Hence, many flag states tend to delegate some authorities to classification societies allowing them to act on their behalf in safety matters.

Liberia with its 700 or more nautical inspectors world-wide also delegate some authorities to the classification societies to carry out inspection and issue statutory certificate to Liberian Registered Vessels.

The Nautical Inspectors do not duplicate the work of the classification societies but also inspect Liberian Registered Vessels to ensure the work delegated to the classification societies are done properly.

The problem of corrosion with the age of ships and a possible solution found was if possible, to order new tonnage or apply what is referred to as "Ship Structural Management" to avoid the problem of corrosion. Anti-corrosive treatment is one of the major solution to the problem of corrosion since its cost is low, easy to apply and its ability to prolong the life of the vessels.

The management of ships nowadays is faced with the problem of third party managers. Practically, the concern of these managers is to make profit, forgetting the most essential part of shipping which is safety.

IMO have set out a Resolution A. 741 which contains the text of the International Management Code for the safe operation of ships and for pollution prevention. It is known as the IMO International Safety Management Code (ISM). All major shipping companies must meet up with the recommendation of this code for quality standard by July 1, 1998.

IMO's work on maritime safety have play a valuable role in keeping the Liberian Flag pre-eminent. By gathering governments around the world in a forum to formulate rules and regulations to guide international shipping, IMO have contributed immensely to the industry.

IMO has devoted more attention to improve the way government implement standards on ships under their flags and has encouraged the establishment of Regional Agreements for carrying out ship inspections by port states.

Liberia has ratified most if not all of these Conventions as soon as they come into being and it has been able to implement majority of the Conventions adopted by the IMO General Assembly.

Proposals

- To keep Liberia pre-eminent in the international competition of open registries, it is proposed that a careful look at Panama and The Bahamas be made while faced with the rival registry of The Marshall Islands. Offering shipowners favourable discount on certain fees charged like what the Bahamas and Panama are doing, could be a positive approach in widening Liberia's chances to be in a dominant

position over other registries since she is already renown for its high safety standards.

- Consideration should now be given to the allocation of some of the fees generated from its registration activities to some ancillary services since it is facing serious threats not only from the general international open registries market, but from a rival registry like the Marshall Islands. Since the Marshall Islands undermine its profit margin, ship repairing activities could be appropriate because it has the tendency of not only yielding substantial profit but creating employment opportunities for Liberian nationals .

It is further proposed to the Government of Liberia through its appointed agent, the Commissioner of the Bureau of Maritime Affairs to delegate the operations of the Liberian Maritime Program to technocrats who are properly trained and have the ability to run it effectively and efficiently. Arbitrary political appointments of personnel home and abroad who are not trained in maritime discipline should stop. The Bureau instead, should strive to retain the few qualified personnel it has and recalled those it has already lost.

- Even though the Maritime Program is praised around the world for its excellent safety records by shipowners, equally so it hasn't been able to exhibit similar records in ports around the country.

Its total involvement in this matter with the National Port Authority is essential since interactions between the two entities need to be cordial enough to guarantee co-operation from the Port Authority to the Bureau's designated Port State Control Officers in carrying out their safety mandate.

The appointed Officials of the Bureau of Maritime Affairs assigned to the National Port/Ports who are responsible to conduct Port State Control Safety Inspections on Vessels entering these ports, need to be provided with the necessary logistics that will help them to properly carry out the duties and responsibilities toward safety of these vessels before sailing .

Justification to this proposal could be made from the unsafe manner in which some so-called ships agents flying all over the National Port manage vessels they are representing. Vessels are over loaded with passengers and cargoes without considering stability and the result can be disastrous to life, property and the environment. There is at present a record on file in the Bureau about a vessel which sank with the lost of life at the already congested pier preventing revenue to the government as it lies there presently occupying the space for other vessels to dock. This incident came about as a result of over looking the safety advice from port state control officers of the Bureau of Maritime Affairs.

A proposal to look at the Liberian Maritime Code at this crucial period of the existence of the maritime program when facing competition from so many open registries is necessary. The Code since 1948, was drafted initially to suit American business necessities. Here comes the creation of the Marshall Islands by the same American Business Entity, The International Trust Company of Liberia to be a rival Open Registry to Liberia for some unprecedented reason-a careful examination could revealed otherwise and there could be need for adjustment or modification in areas that could be of benefit to the country.

Recommendations

It is recommended that the Bureau of Maritime Affairs further extent its effort in support of training qualified personnel in renown maritime institutions around the world even like WMU.

At present, it should double its efforts in such campaign since it has the ability to do so. Simply requesting to the various shipowners whose vessels fly the Liberian Flag for fellowships to train qualified candidate is all what is required .

The training fund set aside in an account at New York with the International Trust Company (ITC) should be utilised in this effort for training candidates.

The continuous training of more women candidate is highly recommendable as there need to be a balance to the Liberian society as well as the international shipping industry.

At the moment it is being witnessed that WMU have strongly supported this initiatives by setting aside some fund from its own operating budget while at the same time soliciting fellowships from many donor organisations around the world. This is the first time in the history of the University to take in so many female candidates. Liberia could be in the fore front of benefiting from this initiative since it is the second largest donors of funds to the IMO.

It is recommended that The Bureau continue supporting Port State Control activities in the country. While Liberia is a major Flag State, it is at the same time a Port State. The need for a vigorous Port State Control Inspection is necessary to tackle the grave safety problem at the Free Port of Monrovia especially , including other ports around the country.

Regional Port State Control has been discussed at the IMO since 1992 for the west and central Africa region and it was regrettable to notice that Liberia was not included in the survey carried out on countries of the region for this consideration. It could be that with Liberia's background as premier in open registry and the second

largest in the world, apply to be the secretariat for such regional arrangements. With a high safety standard records world-wide, it is only fair and could be to its own credit to conduct safety inspections on those vessels calling at its national ports to ensure compliance with the international rules and regulations.

- Last but not the least, an in house training of the staffs at the Bureau of Maritime Affairs on basic maritime subject be considered. Staffs designated to attend IMO Meetings or who are sent to represent the Bureau elsewhere should be able to basically understand what are being discussed and at the same time make some valuable inputs. The training should be in the form of selected materials that could be offer as a course for which credit to the attendants would be given.

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